# *4th*
# National Health
# Research Symposium 2025

## *Advancing Health Research in the Era of Artificial Intelligence*

on

26th November 2025

at the

Grand Ballroom, Hotel Galadari - Colombo, Sri Lanka

# Abstract Book

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Organized by

Directorate of Research-Education Training and Research Unit,

Ministry of Health & Mass Media

together with National Health Research Council

**Welcome to the Fourth National Health Research Symposium – 2025**

The Education, Training and Research Unit of the Ministry of Health and Mass Media warmly welcomes all distinguished guests, researchers, health professionals, and participants to the Fourth National Health Research Symposium – 2025.

The National Health Research Symposium continues to serve as a platform that brings together researchers and practitioners who are committed to improving health through evidence and innovation. Over the years, it has evolved into a forum for sharing ideas, strengthening collaborations and showcasing how research can address the needs of our people.

The theme for this year, "Advancing Health Research in the Era of Artificial Intelligence," reflects a timely and important direction for health research. Artificial Intelligence is no longer a concept of the future, it is now transforming the way we collect, analyze and apply information in healthcare. From early disease detection and clinical decision-making to managing large-scale public health issues, AI is opening new opportunities to improve efficiency, accuracy and reach within our health system.

However, these opportunities also bring new challenges. We are reminded of the importance of responsible innovation of ensuring that technology serves humanity and not the other way around. As researchers and health professionals, our responsibility is to use these tools with wisdom, guided by ethics and a commitment to equity.

The Ministry of Health and Mass Media envisions a Sri Lanka where technological progress is matched by compassion, inclusion and scientific integrity. Our mission remains to achieve the highest possible standard of health for every citizen through evidence-based policy and sustainable practice. We continue to strengthen community engagement, service delivery, and human resource capacity while incorporating new knowledge into our strategies.

The Fourth National Health Research Symposium – 2025 is being held as a one-day program as a trade-off between cost cutting and maintenance of highest scientific rigor, bringing together researchers and professionals from diverse disciplines. The free paper sessions are organized under five themes that reflect the breadth of health research in the country:

- Clinical and Biomedical Sciences
- Public Health
- Ayurveda
- Oral Health
- Cross-Cutting Research

Each session represents a unique perspective on improving health and well-being of Sri Lanka. Together, they demonstrate the value of collaboration between traditional and

modern systems of knowledge, between clinicians and data scientists, and between researchers and policymakers.

The Organizing Committee expresses its sincere appreciation to all researchers who submitted their work, and to the reviewers, judges and moderators who contributed their time and expertise. The Steering Committee and Advisory Board have provided invaluable guidance in shaping this year's program, ensuring that it upholds the scientific and ethical standards that define the National Health Research Symposium.

We hope this event will spark meaningful discussion, inspire new ideas and encourage participants to continue contributing to the growth of health research in Sri Lanka. The knowledge exchanged here today will help to strengthen our health system, guide public policy and improve the quality of life of our people.

We extend our gratitude to all participants for being part of this event. May today's symposium be an inspiring and productive experience for everyone.


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# Abstracts for Free Paper Sessions
# Oral Presentations

# Session 1: Public Health
# Adolescent, Maternal, & School Health

**OP-01: When Families Matter: A Mixed-Methods Study of Family Functioning and Lifestyle-Related Risk Behaviours among Grade Ten Students in Kegalle District, Sri Lanka**

Jayarathna K A D N S[1], Vithana P V S C[2]
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**Introduction:** Family functioning (FF) encompasses social, structural, and interactional dynamics within the family. Limited local evidence highlights the need to examine FF's relationship with adolescents' lifestyle-related risk behaviours, informing community-based interventions to promote healthier behaviours.

**Objective:** To validate a tool for assessing family functioning, determine the prevalence and correlates of unsatisfactory family functioning, and explore its influence on selected lifestyle-related risk behaviours among grade ten students in government schools in Kegalle District.

**Methods:** A descriptive and analytical study was conducted from August 2022 to March 2024 among 1,240 grade ten students in Kegalle District, selected via multi-stage cluster sampling. McMaster Family Assessment Device (FAD) was translated, culturally adapted, and validated using exploratory and confirmatory factor analyses (EFA and CFA, n = 300 each). Data analysed using SPSS AMOS 21 and SPSS 21, with binary logistic regression to control confounding. Qualitative data from Focus group discussions (FGDs) with grade ten students, parents, and teachers were thematically analysed and triangulated with quantitative results. Ethical clearance was obtained from Postgraduate Institute of Medicine, University of Colombo.

**Results:** The validated Sinhala FAD demonstrated acceptable model fit (CMIN/DF = 2.285, SRMR = 0.044, RMSEA = 0.061, IFI = 0.914, CFI = 0.913) and satisfactory reliability (Cronbach's α >0.8). Prevalence of unsatisfactory FF was 38.4% (95% CI: 35.7–41.2), with Communication (41.3%) most affected. Unsatisfactory FF was significantly associated with inadequate physical activity (AOR = 1.94; 95% CI: 1.22–3.01; p = 0.004), sugar-sweetened beverage consumption (AOR = 2.00; 95% CI: 1.40–2.89; p < 0.001), fast food intake (AOR = 1.87; 95% CI: 1.25–2.81; p = 0.002), excessive internet and mobile phone use [(AOR = 2.46; 95% CI: 1.48–4.06; p < 0.001), (AOR = 2.29; 95% CI: 1.83–3.64; p = 0.001)], while parental monitoring was protective (AOR = 0.21; 95% CI: 0.13–0.38; p < 0.001). Qualitative findings supported the influence of FF on adolescents' risk behaviours.

**Conclusions and Recommendations:** Over one-third of adolescents reported unsatisfactory FF, which was strongly associated with multiple lifestyle-related risk behaviours. Community-level, family-targeted interventions aimed at enhancing FF may contribute to reducing risk behaviours among adolescents.

**Key words:** Adolescents, Family, Family functioning, lifestyle-related risk behaviours

## OP-2: Knowledge and Associated Factors regarding labour pain management amongst Antenatal Women:  A Cross-Sectional Study at De Soysa Maternity Hospital, Colombo, Sri Lanka

Wijesinghe DDN[1], Sathsarani RPA[1], Sawindya WDT[1], Bethmage BAK[1], Mudalihetti BVCD[1], Priyadarshanie MN[1], Fernando TRN[2]

[1]*Department of Nursing and Midwifery, Faculty Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka,* [2]*Department of Clinical Sciences, Faculty of Medicine, General Sir John Kotelawala Defence University, Sri Lanka*

**Introduction:** Labour pain is a natural physiological and neurological process that occurs during childbirth, and proper labour pain management is vital for ensuring a positive birthing experience. Although multiple evidence-based labour pain management methods exist, there is limited research regarding the knowledge of antenatal women and the factors associated, particularly in developing countries like Sri Lanka.

**Objective:** The objective of this study was to assess antenatal women's knowledge regarding labour pain management, to compare knowledge levels, and to identify factors influencing these levels.

**Methods:**  A descriptive cross-sectional study was carried out among 422 antenatal women who attended for routine clinics at De Soysa Hospital, Colombo, from April 2024 to April 2025. Participants were selected through a systematic random sampling method. Data were gathered using a newly developed interviewer-administered questionnaire validated using the Modified Delphi method. A pilot study was conducted at the University Hospital, General Sir John Kotelawala Defence University (UHKDU). Knowledge levels were categorized as poor (0-5 marks), average (6-10 marks), or good (11-15 marks) based on previous evidence. Data were analyzed using SPSS version 25, applying both descriptive and inferential statistics. Ethical clearance was obtained from the Ethics Review Committee, KDU.

**Results:** The results indicated that most participants (57.6%) demonstrated an average level of knowledge regarding labour pain management. Multiparous women displayed slightly higher knowledge than primiparous women. Significant associations were observed between knowledge level and age (p=0.030), ethnicity (p=0.011), and sources of information regarding labour pain management (p=0.001). Among sources, prenatal classes were most frequently reported (29.9%).

**Conclusion:** Based on the findings of the study, it can be concluded that the majority of antenatal women have inadequate knowledge regarding labour pain management, which leads to more anxious regarding the childbirth experience and poor coping during labour. Therefore, implementing educational initiatives is important to improve knowledge and understanding among expectant mothers.

**Keywords:**  Labour pain management, Knowledge, Antenatal clinics, Antenatal women

**OP-03: Perception of factors influencing school connectedness among teachers of Sinhala medium government schools in Colombo district**

Nupehewa IS[1], Vithana PVSC[2]

[1] Family Health Bureau

**Background:** School connectedness refers to a nurturing school environment, strong relationships, supportive teachers, and active student engagement, all of which contribute to a positive and enriching educational experience. This sense of connectedness is vital for academic and social development, reflecting how valued, appreciated, and supported students feel within their school. Teachers play a pivotal role in fostering school connectedness through classroom climate, communication, and support, making their perceptions critical for strengthening student engagement and well-being.

**Objective:** To explore teachers' perceptions of factors influencing school connectedness among Sinhala-medium government schools in the Colombo District.

**Methodology:** This qualitative study involved focus group discussions (FGDs) with teachers from Sinhala-medium schools in Colombo to explore their perceptions of school connectedness. Using purposive sampling, representatives from Type 1 AB, Type 1 C, and Type 2 schools were included to capture diverse educational environments. Eleven FGDs, each with eight participants, were conducted until saturation was reached. The sessions, facilitated by the principal investigator and another researcher, followed a structured guide, were audio recorded, transcribed, and thematically analyzed, with results presented in narrative form. Ethical clearance was obtained from the Ethics Review Committee of the Faculty of Medicine in Colombo.

**Results:** The focus groups with teachers highlighted key themes: the importance of relationships, the impact of the school environment, school as a protective factor, students' attachment to school, barriers to relationships, and improvement suggestions. Participants emphasized the need to strengthen school connectedness.

**Conclusions and Recommendations:** The analysis highlights the importance of school connectedness. FGDs recommend allocating funds to underprivileged schools and ensuring equality among them. Programmes should recognize academic excellence, positive behaviours, community involvement, and leadership skills to boost student morale and engagement. Policymakers and administrators should focus on initiatives to strengthen school connectedness in Sri Lanka.

**Keywords:** School connectedness, student success, attachment theory, educational environment, interventions.

# OP-04: Assessment of Knowledge and Perceptions of Sexual and Reproductive Health Education Among 14–16-Year-Old Students, Principals, and Teachers in the Egodauyana MOH Area.

Withanage SJW[1], Gajanayake C[2], Lakshima WDS[3], Nawagattegama GC [1] Karunanayake A[4] Kumara RADDA[4], Chandrasiri W.G.M.M.S.D[1,] Kalubovila KC[3]

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**Introduction:** Egodauyana (MOH) area recorded the highest teenage pregnancy rate in the Colombo RDHS area in 2021. **Despite school-based sexual reproductive health education (SRHE) programs, evidence on their effectiveness in high-risk areas like Egodauyana remains limited.** SRHE is a potential preventive strategy, but effectiveness depends on both the knowledge and perceptions of teachers and learning outcomes of students.

**Objective:** To assess perceptions, teaching experience, and training related to SRHE among principals and teachers in high-risk schools, and to evaluate changes in students' sexual and reproductive health knowledge following structured SRHE interventions.

**Methods:** A **descriptive cross-sectional study with a pre–post interventional component** was conducted from 30th August 2024 to 1st August 2025 among 246 principals and teachers responsible for Grade 9 and above in **12 high-risk schools, identified based on the highest reported teenage pregnancy rates** in the MOH area. Data on teachers' perceptions, teaching history, and SRHE training were collected using structured questionnaires. Student knowledge levels (n = 349) were assessed before and after targeted SRHE sessions (McNemar's test, $p < 0.05$). ERC approval was obtained from MRI Colombo.

**Results:** 80% (n = 195) had more than 10 years of teaching experience, 34% (n = 84) had taught health-related subjects, and 11% (n = 28) had received formal SRHE training. Perception gaps included insufficient contraceptive knowledge (58%, n = 143), lack of confidence in SRHE knowledge (10.5%, n = 26), and the belief that teenage pregnancy cannot be prevented through SRHE (12%, n = 30). **Student knowledge improved markedly, from 7% to 97% after the sessions,** and **improvement was seen in knowledge of puberty-related changes and contraception.**

**Conclusion and Recommendations:** Structured SRHE sessions led to a marked **improvement in student knowledge (7% to 97%).** While Teaching experience is high, but SRHE training and knowledge remain limited. **SRHE should be integrated into the school curriculum.**

**Keywords:** Sexual and Reproductive Health Education, Teenage Pregnancy, School-based Intervention

## OP-05: Determinants of Food Choices and Dietary Habits among Adolescents in Urban Sri Lanka

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**Introduction**: Adolescence is a crucial period for forming lifelong dietary habits. Unhealthy dietary habits among adolescents contribute to the increasing burden of malnutrition and non-communicable diseases (NCDs) in rapidly urbanizing Sri Lanka. However, few studies have explored the relationship between key socioeconomic and family factors and the eating patterns of adolescents in the Sri Lankan context.

**Objective:** This study assessed the association of socio-economic determinants and nutritional knowledge with food choices and eating habits among adolescents in Colombo, Sri Lanka.

**Methods**: A cross-sectional study was conducted among 182 students from two schools which were randomly selected from the Colombo district using multistage random sampling, followed by random selection of students by grade. Eating habits, food choices, socio-demographic and economic factors, and knowledge on nutrition were assessed using a face and content validated self-administered questionnaire. Scoring systems were applied to categorize students into healthy/unhealthy food consumption and satisfactory/unsatisfactory nutrition knowledge. Chi-squared test and Fisher's exact test were used to explore categorical variables, while Pearson correlation coefficient assessed continuous variables. The significance level was set at 0.05. Ethical approval was obtained from the Ethics Review Committee, Faculty of Medicine, University of Colombo.

**Results**: The population comprised of a male to female ratio of 0.83 with a mean age of 13.8(SD=0.58) years. Of the participants, 54.4%(n=99) had healthy food choices and nutritional knowledge was satisfactory only in 45.1% (n=82). Almost 89% considered cost when buying food, and 55.5% (n=101) skipped breakfast due to financial issues. Food choices were not associated with father's occupation (p=0.260) or pocket money (p=0.792), but were positively associated with family discussions (p=0.004), emphasis on healthy nutrition (p=0.048), and religious practices (p=0.003). Better nutritional knowledge demonstrated significant positive associations with female gender (p<0.001) and increased family influence (p<0.001). However, healthy food consumption was not associated with the nutrition knowledge of the participants(p=0.332), depicting a gap between knowledge and practice.

**Conclusion & Recommendations**: Various socio-economic constraints combined with poor application of knowledge may limit healthy eating among urban Sri Lankan adolescents. Findings highlight the importance of empowering families and schools to foster practical nutrition behaviour among adolescents. Public health strategies must address affordability of healthy foods, while strengthening family involvement and practical nutrition skills to reduce malnutrition. School-based gender sensitive nutrition education programs or policy-level affordability interventions are also suggested.

**Keywords**: adolescents, socio-economic determinants, nutritional knowledge, food choices, eating habits

## OP-06: The Psychosocial Determinants of Postpartum Depression Among Mothers in the Postpartum Period in the Ampara District, Sri Lanka

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**Introduction:** Postpartum depression (PPD) is a common yet under-recognized maternal mental health disorder that adversely affects mothers, infants, and families. While global prevalence ranges between 10–20%, Sri Lanka reports rate up to 27.1%. However, existing studies have primarily focused on urban populations, overlooking rural, multi-ethnic communities such as Ampara, where socio-cultural practices and healthcare access differ substantially.

**Objective:** To determine the prevalence of PPD and psychosocial determinants among postpartum mothers in the Ampara District.

**Methods:** A descriptive cross-sectional study was conducted among 279 mothers within one year postpartum, recruited via simple random sampling from three randomly selected MOH areas in Ampara. The sample size was calculated using G*Power based on a 27.1% estimated prevalence, $\alpha = 0.05$, power = 0.80, and a medium effect size. Data were collected in Sinhala and Tamil using a demographic form and the validated Edinburgh Postnatal Depression Scale (EPDS; cut-off ≥9) (Røysted-Solås et al., 2022). Data were analysed using SPSS v28, applying Mann–Whitney U, Kruskal–Wallis, while the multiple linear regression was performed to examine the combined effects of psychosocial factors on PPD symptoms.

**Results:** The prevalence of PPD symptoms was 12.5% (n = 35; 95% CI: 9.0–16.0). Fear of delivery and financial stress were significantly associated with higher EPDS scores ($p < 0.001$). Spousal support, social support, pregnancy planning, maternal age, delivery method, and history of mental illness showed no significant association.

**Conclusions & Recommendations:** Fear of delivery and financial stress emerged as key psychosocial determinants of PPD in rural Ampara. Integrating psychosocial screening into routine maternal healthcare can facilitate early identification and intervention for PPD. Future longitudinal and interventional studies are recommended to guide prevention strategies.

**Keywords:** Postpartum depression, Psychosocial factors, Maternal mental health, Sri Lanka

## OP-7: Undernutrition and Its Contributing Factors Among Children Aged 6–24 Months Attending a Tertiary Care Hospital: A Cross-Sectional Descriptive Study

Mannapperuma B[1], Ganesan S[2]

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**Introduction:** Undernutrition continues to be a major concern among Sri Lankan children under the age of 2 years, despite country's good maternal and child health indicators. The first 1000 days of life are crucial for proper growth and neurological development and failing to meet nutritional demands during this time can lead to long term consequences. While the economic crisis has worsened household food insecurity, there is very limited information on how this has affected their complementary feeding (CF), especially while they are unwell, when specific nutritional interventions may be able to reverse their growth faltering. This study assessed the amount of undernutrition and factors contributing to undernutrition among infants and young children attending a tertiary care centre.

**Methods:** A cross-sectional descriptive study was carried out at Colombo South Teaching Hospital (CSTH), with 246 children aged 6–24 months. Anthropometric measurements were used to evaluate nutritional status, while CF practices and socio-demographic variables were assessed via an interviewer-administered questionnaire. Descriptive statistics and chi-square testing were used for data analysis.

**Results:** Among those studied, 14.6% were underweight, 18.3% found to be stunted, and 39.3% had wasting. Both stunting and wasting were significantly associated with poor maternal education ($p<0.05$) and lower household income ($p<0.01$). Inadequate CF, particularly low quantity, was a major contributor, increasing the odds of underweight (Odds Ratio/OR=3.2), stunting (OR=4.5), and wasting (OR=2.1). 85% had continued breast feeding beyond 1 year, contributing to undernutrition due to inadequate complementary feeding. Although meal frequency and food consistency were mostly appropriate, diversity guidelines were only met by 76.8%. Offering extra meals were seen in 78% during illness, but few provided energy-dense (21%) or preferred foods (43%).

**Conclusion**: While feeding frequency was generally adequate, shortcomings still exist in quantity of food, diversity of diet, and feeding during illness. Interventions, particularly maternal education for low-income families, are important to improve the nutrition for this age group.

**Key words:** Undernutrition, Complementary Feeding Practices, Infants and Young Children, Socio-economic Factors

# Session 2: Public Health
## Health Systems, Community Risks & Disease Prevention

**OP- 08: Utilization and Resource Distribution of Divisional Hospitals in the Northern Province of Sri Lanka: A Descriptive Analysis**

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**Introduction:** Divisional hospitals (DHs) are vital components of Sri Lanka's primary healthcare network, serving as first-line inpatient and emergency facilities in rural areas. However, disparities in utilization and resources may undermine their potential in ensuring equitable healthcare delivery.

**Objective:** To evaluate the utilization patterns, service provision, and resource distribution of DHs in the Northern Province of Sri Lanka, with the aim of identifying gaps and opportunities for strengthening primary healthcare delivery.

**Methodology:** A descriptive cross-sectional analysis was conducted using 2024 data from 55 DHs in the Northern Province, obtained from the PDHS routine health information system. Variables included population coverage, service availability, utilization indicators (admissions, bed occupancy, surgeries), and staffing distribution. Data were summarized using descriptive statistics.

**Results:** Among 55 DHs, 71% were type-C facilities, serving an average population of 12,569, with half covering fewer than 10,000 people. While geographic accessibility was reasonable (mean inter-hospital distance 14.8 km), 76% of DHs had bed occupancy below optimal levels, and 38% lacked overnight care. Most outpatient and maternity services provided, though surgical and obstetric activities were minimal. Staff distribution showed wide variability, with some hospitals lacking adequate clinical and support personnel.

**Conclusion & Recommendations:** Despite widespread physical access, divisional hospitals remain underutilized and unevenly staffed, limiting their role in strengthening primary healthcare in the Northern Province. Rational redistribution of staff and service alignment based on population needs are essential to improve efficiency. Regular performance audits and data-driven human resource planning should be incorporated into regional health management to ensure equity and sustainability.

**Key words:** Health system, Service utilization, Divisional hospitals

**OP – 09: Malariogenic potential in Hambanthota International Sea Port area.**

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**Background:** Hambanthota International Sea Port is the second largest port located in a former malaria-endemic region in Sri Lanka, handles a significant cargo volume. Sri Lanka was certified malaria-free by the WHO in 2016. However, maintaining the malaria free status depends on the proper management of malariogenic potential which is influenced by importation risk and receptivity. A receptive ecosystem needs competent vectors, suitable climate, and a susceptible population.

**Objective:** To assess the malariogenic potential in Hambanthota international Sea Port area through receptivity and importation risk assessments.

**Method:** This study was conducted from January 2022 to December 2024 in Hambanthota sea port area using routine surveillance data and did not require separate ethical approval. Thirty-five entomological surveys were conducted at monthly intervals deploying Larval and adult surveys including human landing catches for anophelines and findings were entered to the AMC's receptivity Google dashboard. Number of imported malaria cases and registrations of at-risk groups were extracted from national case register and regional risk group register.

**Results:** Of the 35 entomology surveys completed, 60% (n=25) were high receptive, while 29% (n=10) were moderate. Out of 35 surveys, 25 (71%) detected *Anopheles culicifacies* adults, with outdoor human biting observed in 19 (54%). One imported *Plasmodium falciparum* case was diagnosed in August 2024, from a cruise ship which docked at the Hambanthota sea port. No secondary transmission was reported. There were 21 individuals from malaria endemic countries registered as a risk group for malaria surveillance working and residing in the seaport area through the study period.

**Conclusions & Recommendations:** The Hambanthota International Sea Port remains a highly receptive and at-risk site for malaria re-introduction due to persistent *An. culicifacies* presence and ongoing importation risks through foreign nationals and imported malaria cases. Continuous entomological surveillance and enhanced screening of risk populations by the Anti Malaria Campaign and Port Health authorities are essential to maintain malaria-free status.

**Key words:** Malariogenic potential, receptivity, importation risk.

**OP-10: Factors associated with delay in rabies post-exposure prophylaxis among patients attending rabies clinic in a tertiary care hospital in Southern Sri Lanka**

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**Introduction:** Exposure to rabies virus through animal-bite injuries is a major public health problem. Prompt initiation of rabies Post-exposure Prophylaxis (PEP) is essential in eliminating rabies by 2030 in Sri Lanka.

**Objective:** We aimed to describe the factors associated with delay in PEP among patients attending rabies clinic in National Hospital, Galle.

**Methods:** A cross-sectional study was conducted using an interviewer-administered questionnaire from April to June 2025. All consecutive patients belonged to WHO exposure categories II and III were included. Details of sociodemographic, animal exposure and PEP were collected. Delay in receiving PEP (delayed group) was defined as reporting for PEP after 24 hours of bite exposure. The Odds Ratios (OR) and 95% Confidence Interval (CI) were calculated using logistic regression. p-value < 0.05 was considered as significant. Ethical approval was obtained from the ethics review committee of Faculty of Medicine, Galle.

**Results:** Of 401 participants, mean age was 35.9 years (SD ±23.2); majority (42.6%) were between 25-64 years and 54.6% were females. The pet owners were 67.6%. Of all, 33.2% had previous exposure. Dogs accounted for 61.3% bites and 47.4% injuries occurred at home. A total of 76.8% had category II exposures. Nearly 22% delayed PEP and median time between bite events and seeking PEP was 16 hours (IQR 3.5 to 24). Among the delayed and non-delayed group, there was a significant difference in attitudes (p=0.04) whereas no difference was observed in knowledge (p=0.41). Regarding associated factors, positive attitudes (p=0.014, OR=0.54, 95% CI:0.33, 0.89) and category III exposure (p=0.039, OR=0.51, 95%CI:0.27, 0.98) seemed to reduce the delay. None of the other factors related to patients or animals were associated with delay in PEP.

**Conclusion & Recommendations:** Delay in seeking PEP was significantly influenced by negative attitudes and category II exposure. Beside knowledge and education interventions, best practices aiming at enhancing attitudes, should be promoted for rabies elimination in Sri Lanka.

**Keywords:** Associated factors, Delay, Post-exposure prophylaxis, Rabies, Sri Lanka

**OP 11: Prevalence and Behaviour of Cutaneous Leishmaniasis Vector Sand fly (Diptera: Psychodidae) in a Transmission Area in Anuradhapura District.**

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**Introduction:** Cutaneous Leishmaniasis (CL), transmitted by *Phlebotomus argentipes*, is an emerging public health problem in Sri Lanka. Understanding vector prevalence and behaviour in endemic areas is essential to inform targeted vector control interventions and surveillance strategies.

**Objective:** To assess the prevalence, biting times, and resting habitats of sand flies in a high-risk CL focus in Sri Lanka.

**Methods:** Entomological surveys were conducted in Eppawala (Thalawa MOH area, Anuradhapura District) at approximately two-month intervals between May 2024 and February 2025. Trapping/collection methods included cattle-baited net traps (CBNT), CDC light traps (LT), indoor and outdoor resting collections (IRC/ORC), human double-net traps (HDNT), and sticky traps (ST) in proximity to households. Specimens were identified morphologically using standard keys.

**Results:** A total of 1,571 sand flies were collected: 392 (25%) *Phlebotomus argentipes* (Females-F), 686 (44%) *P. argentipes* (Males- M), 187 (12%) *Sergentomyia spp.* (F) and 306 (19%) *Sergentomyia spp*. (M). Mean densities of *P. argentipes* (F) were 3 ± 4 per CBNT (n=18) and 6 ± 4 per LT (n=28). In HDNT (n=5), the density was 0.35 ± 0.31 females per person-hour. Biting showed a bimodal pattern with peaks at 18:00–21:00 and 23:00–02:00, indicating personal protection during early evening and late-night hours. Of 398 resting sites examined (bedrooms n=158; outdoor toilets n=105; other outdoor sites n=135), *P. argentipes* (F) were detected resting in outdoor toilets, at 0.02 females per site, suggesting limited indoor residual spraying effectiveness. Sticky traps yielded very low numbers. The densities of *P. argentipes* (F) were relatively high in May and October and came down in December 2024, January and February 2025.

**Conclusions & Recommendations:** The cutaneous leishmaniasis vector *P. argentipes* was prevalent in the study area with predominantly outdoor biting and resting behaviour. This exophilic pattern has implications for vector control, indicating limited indoor transmission potential and highlighting the need for outdoor-targeted control measures.

**Keywords**: Sand fly, Cutaneous Leishmaniasis, *P. argentipes*, Sri Lanka, control

**OP-12: Calculating the Unit Cost for a Patient Treated at the Outpatient Department (OPD) of National Hospital Galle.**

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**Introduction:** The outpatient department (OPD) is the first point of contact for the community in a hospital, and it is one of the most crucial departments in a healthcare facility. Cost analysis studies provide the policymakers with necessary knowledge to make decisions regarding the allocation of resources. Previous studies on outpatient costing in Sri Lanka have been scarce, and international estimates vary greatly; consequently, knowing local values is critical for allocating resources and guiding policy.

**Objectives:** To calculate the unit cost of a patient receiving treatment at National Hospital Galle's (NHG) outpatient department and to calculate the percentages of money spent on consultation, medication, and diagnostics.

**Methods:** This descriptive study was conducted retrospectively in the NHG by using the step-down costing method. The organization's overhead, intermediate, and final cost centers were determined using secondary data. Both recurrent and capital expenditures were computed using the facility survey data on basic inputs, including human resources (HR), equipment, drugs, other consumables, laboratory reagents, administrative costs, electricity and water, housekeeping, and security. This study used only secondary cost data and did not involve human participants. Therefore, ethical approval was not required.

**Results:** NHG spends 12,466,029.32 rupees per month for its whole OPD, and it spends 396.93 rupees per patient seeking treatment at the outpatient department. The unit cost value at NHG was low when compared to a costing study conducted in three North Indian states in 2016 which revealed that the unit cost for outpatient care was INR 170.8 (SLR 599.5). From the whole expenditure, the highest amount is spent on salaries, which is 59.62%; 23.01% is spent for drugs, and 4.69% for investigations. Other recurrent and capital expenditures account for 12.68%.

**Conclusions & Recommendations:** The unit cost for a patient visit at NHG is 396.93 rupees, and it is relatively low when compared with previous studies of other countries and the private sector of Sri Lanka. The estimated unit cost of the OPD serves as a foundation for future budgetary decisions and increases hospital service delivery efficiency. It is recommended that unit prices be calculated for other units and that patients be informed of their treatment expenses to comprehend how much money the Ministry of Health spends on their care.

**Keywords: Unit Cost, Outpatient Department, NHG, Sri Lanka**

## OP-13: Perception on the Healing Environment Among Stakeholders and the Subjective Well-Being of Patients in Selected Hospitals in the Central Province

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**Introduction:** The healing environment, encompassing physical, psychological, and social factors, plays a vital role in promoting patient recovery, comfort, and well-being. Despite global recognition, its significance remains underexplored in Sri Lanka, and little is known about its functioning in allopathic and Ayurvedic hospitals. Understanding users' perceptions is crucial for optimizing facilities, improving patient experiences, and promoting resource-efficient, patient-centered care.

**Objective:** To describe perceptions of the healing environment among patients and staff and assess patients' subjective well-being (SWB) in selected hospitals in the Central Province.

**Methods:** A descriptive, cross-sectional study was conducted in three hospitals: District General Hospital-Nuwara Eliya (DGH-NE), District General Hospital-Nawalapitiya (DGH-NW), and Palath Ayurveda Rohala Pallekelle (PARP). Participants were recruited using systematic random sampling with probability proportionate to size: inpatients (n=372) and staff (Doctors, n=33; Nursing Officers, n=151). Data collection included a pre-tested questionnaire covering socio-demographics, physical and psychosocial aspects of the healing environment, the WHO-5 well-being index for patients, an observational checklist for environment utilization, and key informant interviews (n=5) exploring stakeholder perceptions. Associations were analyzed using Chi-square and Mann-Whitney U tests at a 5% significance level. Ethical clearance was obtained from PGIM.

**Results:** Patients' mean SWB score was 62.6 (±15.6), with significant associations for hospital, duration of stay, occupation, and marital status (p<0.05). Both patients and staff rated spatial layout (3.4), lighting (3.5), and service quality (3.4) highly, whereas sensory comfort was low, with a preference for natural-themed decorations. Social and spatial comfort emerged as priority areas for improvement. DGH-NE received the highest evaluation, followed by PARP and DGH-NW. Stakeholders were aware of the healing environment concept but focused primarily on physical aspects.

**Conclusions & Recommendations:** Both patients and staff prioritized room layout, lighting, and service quality, with a strong preference for a comfortable, nature-inspired environment. Hospital care should adopt a user-centered approach that integrates the physical, psychological, and social dimensions of the healing environment.

**Keywords:** Healing environment, Stakeholders' perception, Subjective well-being, Ayurvedic hospital, Allopathic hospitals

## OP-14: Descriptive Study on Seasonal Variation, Weather Pattern, and Incidence of Nursing Care Emergency Cases in the Community, Delft Island, Sri Lanka

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**Introduction:** Seasonal and climatic variations significantly influence the pattern and frequency of emergency clinical presentations in any community. Delft Island, a remote island off the Jaffna Peninsula, experiences distinct seasonal weather patterns, with most rainfall occurring in November (average annual precipitation 367 mm). The mean temperature ranges from 25.5 °C in January to 29.6 °C in April. This study aimed to describe the seasonal variation of emergency disease incidence and related transport cases from Delft Island. Sea ambulance transport operated by the Sri Lanka Navy serves as the primary emergency medical evacuation method, equipped with essential medical facilities and staffed by trained naval nurses.

**Methods:** Data were retrospectively obtained from naval sea ambulance transport records and divisional hospital transfer logs from **January 2016 to December 2017**. All emergency cases transferred from Delft Island to the Teaching Hospital, Jaffna, were included. Seasonal classification followed the standard Sri Lankan monsoon pattern (Northeast and Southwest monsoons). Data were analyzed descriptively, and results were expressed as frequencies and percentages.

**Results:** A total of 333 emergency cases were transported during the study period. Traumatic injuries were the most common presentation, accounting for 74.2% (n=247) of all emergencies. Snakebite envenomations represented 14.1% (n=46), with cases peaking during the dry season, likely due to increased outdoor activities. Acute cardiac emergencies, including Acute Coronary Syndrome, comprised 14.3% (n=46) and occurred predominantly during the North-West monsoon period. Respiratory emergencies made up 4.2% (n=14), with most cases also reported in the dry season. The majority of patients were aged 13–70 years (64.6%, n=215), while pediatric cases (<13 years) accounted for 15.3% (n=51).

**Conclusion:** Seasonal variation strongly influences emergency case incidence in Delft Island, with trauma and envenomation cases increasing during the dry season and cardiac cases during the monsoon period. These findings highlight the need for targeted resource allocation, strategic naval ambulance deployment, and community health education focusing on injury and disease prevention. Although limited by retrospective data and lack of weather-adjusted analysis, this study provides a valuable foundation for future prospective research on climate-related health patterns in island communities.

**Keywords:** Seasonal variation; Emergency medical transport; Traumatic injuries; Delft Island.

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# Session 3: Clinical & Biomedical
Cancer, Chronic Disease & Translational Medicine

**OP-15: Pre-chemotherapy systemic immune-inflammation index and its associated factors among adult female breast cancer patients at the National Cancer Institute, Sri Lanka**

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**Introduction:** The systemic immune-inflammation index (SII), calculated using platelet, neutrophil, and lymphocyte counts, is used to determine the prognosis, treatment response, and recurrence risk. High pre-chemotherapy SII leads to poor prognosis, lower treatment response, and higher recurrence risk. Local data on SII in Sri Lankan populations are limited, despite possible ethnic and biological variations in inflammatory responses.

**Objective:** This study aimed to evaluate pre-chemotherapy SII and its associated factors among female breast cancer (BC) patients.

**Methods:** A cross-sectional study was conducted among a consecutive sample of 315 adult female BC patients, receiving chemotherapy at the National Cancer Institute, Sri Lanka. Patients with leukaemia, anaemia, or thrombocytopenia were excluded. All participants were treatment-naïve and free from recent infections before blood collection. Pre-chemotherapy SII was calculated from the full blood count report within one week prior to the first chemotherapy cycle and categorised as 'High' & Low' based on a cut-off value of 675. Chi-square test was used to identify factors associated with high SII ($p<0.05$). Ethical approval was obtained from the Ethics Review Committee, Faculty of Medical Sciences, University of Sri Jayewardenepura (ERC/MLS 16).

**Results:** The majority (79.7%) had higher T stage (T2-T4), and the mean age was 55. The median pre-chemotherapy SII was 741.11 (IQR 620–860), and 64.4% (n=203) had high SII. The high SII was significantly associated with age ($p<0.001$), BMI ($p=0.040$), menopausal state ($p<0.001$), T stage ($p=0.007$), histological grade ($p<0.001$), and HER2 positivity ($p=0.012$). No significant associations were observed with molecular subtypes, lymph node involvement, N stage, histological type, ER status, PR status, and Ki-67 proliferation.

**Conclusions & Recommendation:** In line with global literature, our study found higher pre-chemotherapy SII levels among younger, obese, premenopausal women with advanced BC. Findings should be interpreted cautiously due to the cross-sectional design and absence of multivariate analysis. Longitudinal studies are warranted to confirm the predictive value of pre-chemotherapy SII in prognosis, treatment response, and recurrence.

**Keywords:** Systemic immune-inflammation index, breast cancer, associated factors

**OP -16: Clinicopathological Links in Breast Cancer: A Sri Lankan Study**

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**Background:** Breast cancer is a major public health concern with a rising global incidence. Clinicopathological features strongly influence prognosis and treatment outcomes. Identifying the clinicopathological profile and associations between clinical and histopathological factors is crucial for optimizing breast cancer management. However, data on molecular subtypes and histopathological correlations in the Sri Lankan context is limited.

**Methods:** This descriptive cross-sectional analysis involved a retrospective review of 386 pathology records at the Professorial Pathology Unit of a tertiary care hospital in Sri Lanka of females diagnosed with breast malignancies from January 2010 to August 2024. Consecutive sampling was applied, excluding cases with prior surgical or adjuvant treatment. Data were collected using a pre-tested data extraction sheet and analyzed with SPSS. Variables included age, presenting complaints, prior investigation results, histopathological features, and immunoprognostic markers. Associations were examined using the chi-square test, or Fisher's exact test. A p-value $<0.05$ was considered statistically significant. Ethical exemption for this retrospective record review was obtained from the Ethics Review Committee of the Faculty of Medical Sciences, University of Sri Jayawardenepura.

**Results:** The mean age was 58.8 years (SD±11.5), with 53.2% aged <60 years. Most patients (81%) presented with breast or axillary lumps. Tumour size ranged from 21–50 mm in 62.2% of cases. Invasive carcinoma of no special type was the predominant histological subtype (79.5%). Immunohistochemistry showed estrogen receptor (ER) positivity and HER2 positivity in 68.3% and 19.2%, respectively. Significant associations were observed between low Nottingham grade and ER positivity ($p<0.001$); large tumour size (>50 mm) and high Ki67 index ($p=0.018$); and HER2 positivity and ductal carcinoma in situ (DCIS) ($p=0.003$).

**Conclusions:** Breast cancer in Sri Lankan females predominantly affects relatively younger women and often presents with intermediate-sized tumours. The notable proportion of HER2-positive and high Ki67 tumours underscores the need for wider access to targeted therapies and intensified treatment for aggressive subtypes. These findings may guide local treatment protocols and screening strategies, though generalisability is limited by the single-centre design.

**Key Words:** Breast cancer, Clinicopathological Profile, Immunohistochemistry, Sri Lanka

## OP-17: Risk of Developing Hypertension in a Cohort of Sri Lankans: Joint Longitudinal Analysis of Data Over 10 Years

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**Introduction:** Hypertension is the number one cause of cardiovascular diseases (CVD) and is usually asymptomatic until a CVD develops. Therefore, identifying patients at risk of developing hypertension is important to implement primary preventive measures.

**Objective:** We aimed to identify risk associations of hypertension using longitudinal follow-up data of a Sri Lankan cohort.

**Methods:** We used follow-up data from the Ragama Health Study cohort enrolled in 2007. For each participant, the last clinic visit between 2017-2019 was the index, with data from 3,6,9,12,15,18,21,24 months, and 3,5,7,10,12 years prior. As data were mostly complete for the first seven time points, analyses used 238 participants, with remaining missing values imputed. Hypertension predictors were identified by jointly modelling systolic (SBP) and diastolic blood pressure (DBP) using non-linear mixed effects modelling. To assess potential improvements in predictive performance and flexibility, two machine learning (ML) extensions, Mixed Effects Random Forest (MERF) and Mixed Effects Gradient Boosting, were also explored.

**Results:** Age (higher in older individuals) was significant for SBP, while gender (higher in males), and education level (higher in more educated individuals, a counterintuitive association possibly reflecting unmeasured contextual factors) were for DBP. In the joint model, the two responses interacted differently with fixed predictors, notably SBP increased with age while DBP decreased. Random effects from body mass index and lipoproteins were essential for explaining variations in blood pressure. In ML analysis, MERF performed best (Area Under the Curve of 0.68). Gender was the most important fixed predictor, and among random effects, antiplatelet therapy and statin use had meaningful variability along with participants' individual variations.

**Conclusions & Recommendations:** Overall, age, gender, and individual variability were identified as key factors influencing hypertension risk and may inform preventive risk stratification.To increase generalizability, a larger sample size is recommended. Additionally, Bayesian modelling approaches may better capture the complex correlation structures between SBP and DBP.

**Keywords:** Hypertension, Mixed effects modelling, Joint modelling, Machine learning

**OP-18: Rational use of intravenous albumin: a national audit of prescribing practices in government hospitals of Sri Lanka**

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**Introduction:** Intravenous (IV) albumin is frequently used in hospitalized patients for a variety of medical conditions, beyond evidence-based indications. It ranks among the costliest drugs in Sri Lanka (SL). Despite this, no studies conducted to evaluate the appropriateness of IV albumin prescribing practices in local setting.

**Objective:** This aimed to examine the demographic characteristics of patients, clinical indications, prescriber-related factors, and the quality of documentation pertaining to intravenous albumin administration in identified health institutions in SL.

**Methods:** Audit standards were developed by the expert committee of this audit, based on the latest international guidelines, as no local guidelines currently exist. A multicentre retrospective prescription audit in 15 hospitals (2-national, 12-teaching and 1- district general) representing 8 provinces was conducted using data extracted from patients' bedhead tickets (BHTs) who received IV albumin during one-month at each participating centre (Feb–Apr 2024) by trained doctors. Ethical clearance was taken from University of Colombo, and institutional clearance were taken.

**Results:** A total of 866 patient records were analyzed. The mean age was 59.4 years (SD ±13.9), with 58.2% being male. Albumin use occurred in medical wards( 40%), surgical wards (15.9%), ICUs (18.9%), and other specialized units (25.2%). Documentation was incomplete: indication was specified in only 36.3%, dose in 83.7%, concentration in 41%, frequency in 93.8%, duration in 85.2%, and total dose in 6.6%. Prescribers were recorded in 93.2%, but only 45.5% were specialist consultants. The main indications were chronic liver cell disease (CLCD) [31.6%], therapeutic plasma exchange (TPE) [3.6%], hypoalbuminaemia [5.3%], surgical indications [15.4%], and sepsis [15.1%]. Definitive indications were identified only in TPE [3.6%], and CLCD [21.0%] which represented 66.4% of CLCD-related usage. In contrast, 28.4% of prescriptions were for conditions with minimal or no supporting evidence, and 47.0% were for situations where albumin is not clearly indicated. Appropriate use higher in tertiary hospitals and when prescribed by a specialist, but not significant.

**Conclusion & Recommendation:** Documentation of IV albumin prescribing is inadequate, and usage is often for non-definitive or poorly supported indications. Implementation of monitoring and scrutiny mechanisms and national duidelines are urgently required to ensure rational use and sustainability of the free healthcare system in SL. The reesults could support policy-level interventions and training programs for prescribers to promote evidence-based usage.

**Key words:** Rational use of IV albumin, Intravenous albumin, National prescription audit, Sri Lanka

## OP-19: Kidney X: Integrating Clinical and Imaging Biomarkers for Chronic Kidney Disease Detection and Prediction

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**Introduction**: Chronic Kidney Disease (CKD) is a catastrophic condition that negatively impacts approximately 850 million individual's renal dysfunction worldwide, making timely and accurate detection a global health concern. Though the local statistics differ from the world statistics slightly, over 15% of households reported having at least one member diagnosed with CKD in Sri Lanka, highlighting the urgent need for effective diagnostic models. The standard diagnostic tests primarily employ serum-based biomarkers such as creatinine and glomerular filtration rate (GFR), which are invasive, expensive, and less effective for detecting early stages.

**Objective**: The aim of this study was to develop a hybrid predictive CKD model with the assistance of non-invasive urinary biomarkers by combining conventional urinalysis parameters with image-based urine sediment analysis using machine learning and deep learning models.

**Methods**: Urine samples from 24 participants consisting of healthy controls and CKD patients of stage 3 and above were procured under ethical approval and prepared for visual, chemical, and microscopic inspection. As the sample size is relatively small, the primary dataset was expanded using row-wise augmentation, which helped increase data diversity and reduce the risk of the model overfitting. Clinical findings were being derived from Urine Full Reports (UFR), while pre-processing of high-resolution images and analysis were performed by a pre-trained VGG16 Convolutional Neural Network (CNN) with PCA-based dimensionality reduction. The collected dataset was trained using K-Nearest Neighbors (KNN), Support Vector Machine (SVM), CNN, and ensemble of KNN–SVM models, and performance was evaluated using stratified 5-fold cross-validation for accuracy, precision, recall, F1-score, and ROC-AUC. Accuracies were 69% (SVM) and 81% (KNN) for urinalysis-only models, while the ensemble was 91.3%. Training on images of urine with CNN gave 87.8% accuracy, while VGG16-extracted features were up to 88%.

**Conclusion & Recommendation**: The highest recorded performance was from the hybrid ensemble model derived from urinalysis and image-based features, which achieved an accuracy of 94.2%, indicating the complementarity diagnostic utility of multimodal data. The findings indicate that application of image biomarkers with structured urinalysis improves predictive performance and supports cost-effective, non-invasive clinical decision-making. Generalizability must be confirmed in future research based on a larger data set, including patients with CKD stages in early disease, and the implications of real-world implementation should be investigated in low-resource and point-of-care practice to enable timely intervention and improved patient outcomes.

**Keywords**: Chronic Kidney Disease, Machine Learning, Urinalysis, Predictive Modeling, Biomarkers

# Session 4: Oral Health
## Cancer, Public Health Dentistry, Microbiology & Materials Science

## OP-20: Effects of Dental Implants on Dietary and Nutritional Outcomes in the Elderly: A Systematic Review

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**Introduction:** With increasing life expectancy, maintaining oral health is essential for healthy ageing. Tooth loss is common in the elderly, leading to impaired chewing, restricted food choices, and poor nutrition. Dental implants offer a means to restore oral function and improve dietary quality.

**Objective:** To systematically evaluate the effects of dental implants on dietary patterns and nutritional outcomes in older adults.

**Methods:** A systematic search was conducted in six databases for studies published between January 2004 and January 2024. Eligible studies included randomized controlled trials, cohort, and cross-sectional studies involving elderly individuals rehabilitated with dental implants and reporting dietary or nutritional outcomes. Study quality was assessed using the Mixed Methods Appraisal Tool (MMAT). The review was pre-registered in PROSPERO (CRD42024593129).

**Results:** From 3,229 records, 18 studies met inclusion criteria, comprising a total of 57,667 participants. Dental implants consistently improved chewing function; for example, bite force increased from 46.6 N at baseline to 103.9 N after 52 weeks. Enhanced masticatory ability was associated with higher dietary satisfaction. Nutritional outcomes were mixed: one study found that dental prostheses helped maintain total protein intake by 79% and animal protein intake by 71%, while others showed no significant differences in fiber, energy, or micronutrient intake. Quality assessment indicated moderate to high rigor, with 83.3% of studies scoring between 5 and 7 on the MMAT.

**Conclusions & Recommendations:** Dental implants markedly improve chewing efficiency and dietary satisfaction in elderly populations. Their impact on specific nutritional markers remains inconsistent. Future research should employ standardized nutritional assessments and long-term follow-up to better establish links between restored oral function and overall nutritional health.

**Keywords:** Dental implants; elderly nutrition; chewing ability; Nutrition

## OP 21: Oral Health–Related Quality of Life and Its Associations with Histopathological Features in Oral Cancer Patients: A Cross-Sectional Study in Kandy District

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**Introduction:** Oral cancer is a major public health concern in Sri Lanka, significantly impacting patients' oral health related quality of life (OHRQoL). Histopathological features and treatment modalities may influence the post-surgical OHRQoL in oral cancer patients.

**Objective**: To determine the OHRQoL using Oral Health Impact Profile (OHIP-14) and to assess its associations with histopathological features and treatment methods in patients with oral cancer attending Teaching Hospital Peradeniya and National Hospital Kandy.

**Methodology**: An analytical cross-sectional study was conducted, n=50 patients were recruited using nonprobability convenience sampling method, following informed written consent. Inclusion criteria were age above 18 years, primary oral squamous cell carcinoma, within 3-6 months post-surgery. Patients with relapses and secondary cancers, mentally compromised individuals, and pregnant or lactating mothers were excluded. Data was collected using interviewer-administered questionnaire using validated Sinhala version of the OHIP-14 tool. Higher OHIP-14 scores indicate poorer OHRQoL. Data was analyzed using GraphPad Prism, Mann–Whitney U, and Kruskal–Walli's tests were used for subgroup comparisons.

**Results**: OHIP-14 scores varied from 3-55, the mean ± SD was 32.4 ± 11.5, and the median was 33. Statistically significant associations were observed between OHIP-14 scores and tumor stage ($p = 0.004$), lymph node involvement ($p < 0.0001$), and histological differentiation ($p = 0.003$). Patients receiving radiotherapy demonstrated greater deterioration of OHRQoL compared to those managed surgically alone ($p < 0.0001$).

**Conclusion & Recommendation**: Our results demonstrate significant association between post-surgical OHRQoL and histopathological features, while adjuvant radiotherapy may worsen OHRQoL due to complications such as mucositis and xerostomia. Patients with advanced tumor stage, lymph node involvement and poorly differentiated tumors may present with worse OHRQoL, post-surgery. Integrating psychosocial support, counselling, and rehabilitation into care pathways, and managing side effects of radiotherapy may improve OHRQoL, and treatment outcomes in oral cancer patients.

**Keywords**: Oral Cancer, Oral Health-Related Quality of Life, Oral Health Impact Profile – 14, Sri Lanka

## OP-22: Prevalence and Sociodemographic Factors Associated with Betel Quid Dependence

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**Introduction:** Betel quid chewing is a deeply rooted cultural habit in South Asia, but it presents serious health risks, including mouth cancer, and can lead to dependence. Despite its widespread use, limited hospital-based research in Sri Lanka has examined the prevalence and correlation of betel quid dependence. Understanding its prevalence and determinants is essential for designing effective prevention and cessation programs. The Betel Quid Dependence Scale (BQDS) assesses dependence through three subscales: physical and psychological urgent need, increasing dose and maladaptive use.

**Objectives:** This study aimed to assess the prevalence and severity of betel quid dependence among adult chewers using the BQDS and to explore associations with sociodemographic characteristics.

**Methods:** This hospital-based cross-sectional study was conducted in Kandy among 400 individuals who reported regular betel quid chewing. Purposive and snowball sampling methods were used. Data were collected using a self-administered questionnaire, and ethical clearance was obtained from the Ethics Review Committee, Faculty of Medicine, University of Peradeniya (2021/EC/50).

**Results:** Sociodemographic data (age, gender, and education level) and responses to the 16-item BQDS were collected. Dependence was defined as a total BQDS score greater than 4. The point prevalence of betel quid dependence was 99.3% (n=397). The mean age of participants was $55.8 \pm 15.4$ years; 332 (83%) were males and 68 (17%) females. The mean total BQDS score was $10.01 \pm 2.51$, ranging from 4 to 16. Age showed a positive correlation with total dependence ($r = 0.150$, $p = 0.003$). Gender comparisons revealed no significant differences in "physical and psychological urgent need" ($t = -0.237$, $p = 0.813$) or "increasing dose" ($t = -0.192$, $p = 0.848$). However, females scored significantly higher on "maladaptive use" than males ($1.97 \pm 0.90$ vs $1.68 \pm 0.95$; $t = 2.286$, $p = 0.023$). ANOVA showed significant variation across education levels, with degree holders reporting lower dependence.

**Conclusion:** Dependence symptoms are widely prevalent regardless of demographic background, although severity differed by education status. Targeted community-level interventions and health education with additional counselling support are needed to address betel quid dependence among adults in the Kandy District of Sri Lanka.

**Key words:** Betel quid dependence scale, BQDS, betel chewers, age, gender, education, sociocultural factors

**OP-23:  Bridging the Gap: Oral Cancer knowledge Among Primary Healthcare Workers:  A cross-sectional study in Rathnapura, Sri Lanka**

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**Background:** Cancer is a growing health burden globally, with oral cancer ranking a leading cancer among men particularly Southeast Asian (SEA) region including Sri Lanka. Health professionals' knowledge and awareness of oral cancer is the key to ensure timely referral for early detection and prompt treatment.

**Objective:** To determine primary healthcare workers' knowledge on prevalence of oral cancer, risk factors and clinical signs of Oral Potentially Malignant Disorders (OPMD) and their awareness on existing referral systems for high-risk individuals.

**Methods:** A cross-sectional survey was conducted among Public Health Midwives (PHMs) and Public Health Inspectors (PHIs) in the Ratnapura district, Sri Lanka. Participants completed a validated, pre-tested self-administered questionnaire assessing their knowledge and experience related to oral cancer and OPMD.

**Results**: A total of 405 health professionals participated. Most respondents recognised betel chewing (99.3%, n= 400), smoking (87.6%, n= 353) and alcohol consumption (65.8%, n= 265) as risk factors for OPMD and oral cancer, while only (10%, n=41) identified Human Papilloma Virus as a risk factor. Similarly, the majority could identify key clinical signs including white patches (84.1%, n=339), red patches (70.2%, n= 283), white and red mix patches (80.6%, n= 325) and persistent ulcer (88.3%, n= 356) as changes of mucosa in oral cancer and OPMD.  However, the awareness of the existing referral system for high-risk individuals was limited. Only 49% (n=198) correctly identified the person responsible for referrals and just 55% (n=223) knew to whom the high-risk individuals should be referred.

**Conclusions & *Recommendation***: While most of PHIs and PHMs demonstrated good awareness of prevalence, risk factors and the mucosal changes associated with OPMD and oral cancer, knowledge of the referral pathways was insufficient. Regular (annual or bi-annual) capacity building programmes are recommended to update primary healthcare workers on referral systems as they play a crucial role in the existing referral process for oral cancer and OPMD. Thereby increases the timely referral of high-risk individuals to dental surgeons and improves the early detection of OPMD and oral cancer.

**Key words-** Oral cancer, Oral Potentially Malignant Disorders, Risk factors, Primary healthcare workers

# Session 5: Clinical & Biomedical Imaging, Diagnostics & Medical Physics

## OP-24: Noise Power Spectrum and Modulation Transfer Function Analysis of a PET-CT System Using Catphan® Phantom

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**Introduction**: Advanced image quality metrics such as noise power spectrum (NPS), task transfer function (TTF), and modulation transfer function (MTF) provide deeper insights into CT performance beyond routine quality assurance (QA) tests.

**Objective**: To analyze NPS, TTF, and MTF of a Siemens Biograph Horizon PET-CT system and evaluate its spatial resolution and noise characteristics.

**Methods**: Catphan® 503 phantom images were reconstructed at 130 kV using a 2 mm slice thickness and the B31 kernel. Three repeated scans were performed under identical conditions to assess reproducibility. Mean values and standard deviations were calculated for each metric. NPS was measured using region-of-interest (ROI)-based statistical analysis. TTF values ($f_{50}$% and $f_{10}$%) and MTF ($f_{50}$%, $f_{10}$%, $f_2$%) were calculated to assess system resolution. No formal statistical tests were conducted, as the analysis focused on comparison with manufacturer's reference specifications and internationally reported benchmark values.

**Results**: Noise variance was low (0.064 $HU^2$), with a peak frequency of 0.221 cycles/mm. TTF results demonstrated stable performance across materials, with $f_{50}$% values around 0.32 cycles/mm. MTF analysis revealed high resolution, with $f_{50}$% and $f_{10}$% values consistent with published benchmark data, confirming the scanner's ability to resolve fine structural details.

**Conclusions & Recommendations**: The evaluated PET-CT system demonstrated robust performance in advanced image quality metrics, comparable to international benchmarks for high-resolution CT. These findings support maintaining consistent image quality for accurate PET-CT interpretation. Incorporating advanced QA metrics into routine evaluations provides a comprehensive understanding of CT performance and supports optimization of reconstruction algorithms for clinical imaging.

**Keywords:** PET-CT, Noise Power Spectrum, Modulation Transfer Function, Task Transfer Function.

## OP-25: Comprehensive Evaluation of CT Image Quality Parameters in a PET-CT System Using Catphan® Phantom

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**Introduction**: Quantitative CT image quality assessment is crucial for hybrid PET-CT systems, where anatomical accuracy and reliable attenuation correction (AC) directly influence clinical outcomes. Phantom-based evaluation provides standardized performance benchmarks.

**Objective**: To evaluate the CT subsystem's image quality in a Siemens Biograph Horizon PET-CT system using the Catphan® 503 phantom, referencing AAPM Task Group 233 (2019) and IAEA Human Health Series No. 19 (2012) guidelines.

**Methods**: The phantom was scanned under standardized conditions (controlled temperature, alignment) at 110 kV and 130 kV. Images were reconstructed with a 2 mm slice thickness using clinical kernels. Parameters assessed against international tolerances included CT number accuracy, uniformity (center–periphery HU variation), noise (pixel intensity standard deviation), and high-contrast spatial resolution (line-pair patterns).

**Results**: CT number accuracy complied with QA criteria for most materials, though Delrin and Teflon exhibited deviations beyond manufacturer-specified thresholds. Uniformity was robust, with center–periphery HU variation consistently <3 HU, surpassing TG-233 (<7 HU) and IAEA (<10 HU) limits. Noise magnitude analysis indicated stable detector performance and reconstruction fidelity across slices. High-contrast spatial resolution achieved 8 lp/cm with the B31 kernel, consistent with expected performance for soft-tissue protocols.

**Conclusions & Recommendations**: The CT subsystem demonstrated high-level compliance with international QA standards, with minor material-specific deviations attributable to protocol or calibration differences. Advanced phantom-based QA should be integrated into routine monitoring of hybrid PET-CT systems to ensure quantitative accuracy for attenuation correction, dose optimization, and precision in oncological applications.

**Keywords**: PET-CT, Catphan, Image Quality, Quality Assurance, Diagnostic Imaging

## OP 26 Development and Geometric Accuracy Validation of a Software-Based Digital Digitizer for 2D Treatment Planning

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**Introduction:** Accurate geometric input of patient anatomy is essential for radiotherapy planning, especially when using conventional 2D planning systems for cobalt-60 (Co-60) treatment machines. After the breakdown of the physical digitizer at the National Cancer Institute, Maharagama, in 2013, a critical challenge arose in continuing 2D Co-60 treatment planning. To overcome this, *a locally developed, low-cost software-based digital digitizer tool* was created using MATLAB to replicate and replace the functions of the conventional physical digitizer. While similar type tools exist in high-resource settings, this version represents a *novel, resource-adapted solution* designed specifically for low- and middle-income healthcare environments. Its geometric accuracy required validation before clinical implementation.

**Objective:** To validate the geometric accuracy of a software-based digital digitizer for 2D Co-60 radiotherapy planning.

**Methods:** The tool was developed using MATHLAB to input organ coordinates into 2D radiotherapy planning, defining CT image scale with a 10 cm reference and establishing the image origin for accurate coordinate mapping. Validation was performed using the Varian Eclipse treatment planning system (TPS) as reference. On each CT slice, ten anatomical or geometric reference points were manually marked in Eclipse. Their (x,y) coordinates were extracted and compared with corresponding points digitized using the software tool. To minimize observer variation, *all point markings were performed by a single experienced and trained medical physicist* under consistent viewing and scaling conditions. Euclidean distance error for each point was calculated. Thirty CT slices (300 points total) were tested. The predefined acceptance criterion was a coordinate error ≤ 2 mm across all points. ERC Was not required.

**Results:** All evaluated points satisfied the acceptance criterion. The overall pass rate was 100% across 300 points. The mean coordinate error was 0.53 mm (**Standard Deviation** 0.24 mm), with errors ranging from 0.04 mm to 1.21 mm. No points exceeded the 2 mm tolerance, confirming consistent accuracy across sites.

**Conclusions & Recommendation:** The validated software-based digital digitizer demonstrated clinically acceptable geometric accuracy compared with Eclipse, confirming its suitability as a replacement for the broken physical digitizer in 2D Co-60 planning. The locally developed, low-cost design enhances accessibility and sustainability in resource-limited radiotherapy centers. The developed tool can replace physical digitizers for Co-60 treatment, with periodic QA checks and integration into 2D workflows in low-resource settings. To date, over 500 patients' Co-60 radiotherapy plans have been successfully completed using this developed tool.

**Keywords:** Digital digitizer, Radiotherapy planning, Co-60, 2D radiotherapy Treatment

# OP-27: Spectral Signatures of Malignancy": Infrared Protein Conformation Profiling to differentiate Oral Squamous Cell Carcinoma from Precancerous Lesions

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**Introduction:** Oral squamous cell carcinoma (OSCC) constitutes over 90% of oral malignancies, while oral potentially malignant disorders (OPMDs)—including oral submucous fibrosis (OSF), oral leukoplakia (OLK), and oral lichen planus (OLP)—are recognized precursors with variable risks of malignant transformation. Although histopathology remains the diagnostic gold standard, it is invasive and unsuitable for population screening. Attenuated Total Reflection–Fourier Transform Infrared (ATR-FTIR) spectroscopy provides a rapid, non-invasive approach to detect biomolecular alterations in serum. However, systematic spectral comparisons across OSCC and OPMD subtypes remain limited.

**Objective:** To evaluate the diagnostic potential of ATR-FTIR spectroscopy in differentiating sera from healthy controls (HC), OPMD, and OSCC based on protein conformational changes.

**Methods:** Serum samples from 110 participants—OSCC (n=22), OLK (n=22), OLP (n=22), OSF (n=22), and HC (n=22)—were analyzed using a Thermo Scientific Nicolet iS50 FTIR spectrometer. Spectra (400–4000 $cm^{-1}$) were baseline-corrected, min–max normalized, and deconvoluted using Gaussian curve fitting. Statistical analyses (two-tailed Student's t-test, ROC curve) were performed in IBM SPSS (v26.0). Ethical clearance and informed consent were obtained (ERC/FDS/UOP/E/2021/14).

**Results:** Ten wavenumbers (1372, 1381, 1390, 1398, 1412, 1421, 1609, 1635, 1665, and 1683 $cm^{-1}$) showed significant spectral variation between diseased and control sera. OSCC demonstrated the largest amide I peak shift (3.13 $cm^{-1}$), indicating α-helix to β-sheet transition. Wavenumbers 1381 $cm^{-1}$ and 1683 $cm^{-1}$ differentiated all diseased groups from controls, while 1390 $cm^{-1}$ yielded optimal accuracy for OSCC (77.3% sensitivity, 86.4% specificity).

**Conclusions & Recommendations:** ATR-FTIR spectroscopy effectively distinguishes serum samples from OSCC and OPMDs through detection of protein secondary structure alterations, reflecting disease-related biochemical changes. Peaks at 1381 $cm^{-1}$ and 1683 $cm^{-1}$ serve as robust spectral biomarkers, highlighting FTIR spectroscopy as a promising, non-invasive tool for early diagnosis and risk stratification of oral precancer and cancer. Further validation with larger cohorts is recommended to establish FTIR-based spectral markers as reliable tools for early screening and disease stratification.

**Keywords**: OSCC, OPMD, FTIR spectroscopy, Serum biomarkers, Protein conformational changes

# OP-28: MACHINE LEARNING-BASED CLASSIFICATION OF HISTOLOGICAL SUBTYPES OF INVASIVE BREAST CANCER USING MRI CONTRALATERAL BREAST TEXTURE FEATURES

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**Introduction:** Invasive Breast Cancer (IBC) is among the most prevalent malignancies, affecting 1 in 8 women worldwide. It poses significant diagnostic challenges, particularly in distinguishing between Invasive Ductal Carcinoma (IDC) and Invasive Lobular Carcinoma (ILC). Contralateral breast (CLB), commonly used as a reference for normal tissue, may exhibit subtle malignancy-related changes, detectable even without visible tumors, providing valuable non-invasive insights for histological subtype differentiation.

**Objective:** This study aimed to develop a machine learning (ML) model to differentiate between IDC and ILC by analyzing glandular texture features from CLB magnetic resonance images.

**Methods:** T1-weighted pre-contrast CLB magnetic resonance images were obtained from TCIA website and segmented using 3D Slicer, producing a dataset of 2,444 slices (1,890 IDC, 554 ILC). First-order and GLCM texture features were extracted from the glandular regions in MATLAB, and ANOVA F-test was applied for feature selection. The dataset was balanced using the SMOTE technique and subsequently split into training (80%) and testing (20%) subsets. The training set was used with multiple ML algorithms, employing ten-fold cross-validation. The selected hyperparameters were optimized via random grid search, and the performance was evaluated using accuracy, precision, recall, and F1 values.

**Results:** The initial model achieved 0.9038 accuracy, and although the ANOVA F-test showed varying feature importance, all extracted features may contribute to predictive performance. The Random Forest classifier achieved the highest mean-cross-validation scores for both the original (0.8989 ± 0.0224) and the SMOTE dataset (0.8723 ± 0.0209), with final accuracies of 91% and 87%, respectively. This demonstrates strong discriminative performance, though the limited dataset may cause overfitting.

**Conclusions & Recommendations:** The findings suggest that CLB texture features could serve as valuable non-invasive biomarkers for IBC subtype classification, and their integration into Artificial Intelligence-assisted radiology workflows may enhance clinical significance. Future research should focus on larger populations using deep learning approaches.

**Key words** - Invasive breast cancer, Invasive ductal carcinoma, Invasive lobular carcinoma, Magnetic resonance imaging, machine learning

## OP-29: Study the Scaling Factor of ¹⁸F-fluorodeoxiglucose (¹⁸FDG) Activity used in PET Scanning

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**Introduction:** Positron Emission Tomography (PET) with 18F-fluorodeoxyglucose (18F-FDG) is widely used in oncology, neurology, and cardiology, offering quantitative assessment of tissue metabolism. The administered 18F-FDG activity is typically determined by using body weight, lean body mass (LBM), or fixed-dose protocols. It varies by institution, influencing image quality, radiation dose, and accuracy of standardized uptake values (SUVs). In oncology, SUV accuracy is clinically important for staging, treatment response assessment and follow-up. Therefore, international guidelines recommend scaling factors to standardize practice for activity administration and balance diagnostic quality with radiation dose.

**Objective:** To evaluate the scaling factor of administered 18F-FDG activity in PET scanning at the National Cancer Institute, Maharagama, and compare it with international standards.

**Methods:** A total of 350 anonymized PET records, including 100 cases less than 15 years, were retrospectively reviewed. Administered 18F-FDG activity, body weight, age, and sex were documented. As the dataset included no obese subjects (>90 kg), the influence of LBM variation was considered negligible, and LBM-based corrections (James, Janmahasatian) were excluded. Scaling factors were computed using mathematical software and compared with reference standards from European Association of Nuclear Medicine (EANM) and IAEA guidelines. This retrospective audit used fully anonymized data and was exempted from ERC review

**Results:** The pediatric scaling factor was 3.66 MBq/kg, aligning with the recommended 3.7–5.2 MBq/kg range, indicating appropriate practice. The adult scaling factor was 2.9 MBq/kg, below the internationally recommended average of 4.3 MBq/kg. These findings confirm previous local studies reporting relatively lower adult activity levels.

**Conclusions & Recommendations:** Current pediatric PET practices are consistent with international standards, ensuring diagnostic reliability and radiation safety. However, adult administered activities are comparatively lower, raising concerns about potential under-dosing and compromised lesion detectability. Optimization of adult PET protocols is necessary to balance diagnostic accuracy, radiation protection, and tracer availability in line with international guidelines.

**Keywords:** PET, 18F-FDG, scaling factor, administered activity, radiation safety

# Session 6: Clinical & Biomedical Infectious Diseases, Genomics & Virology

## OP-30: Retrospective Study on Genome Detection and Phylogenetic Analysis of Mpox Virus (MPXV) Using Oxford Nanopore Sequencing in Sri Lanka

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**Introduction:** MPXV, a rare zoonotic virus that attracted global attention in year 2022, with the clade IIb outbreak that occurred worldwide across non-endemic regions. MPXV genomic sequencing provides a precise characterization of the virus with clade typing, tracking changes in the virus and insights into the genomic epidemiology with transmission dynamics in a given context. Choice of the sequencing instrument and protocol is likely to depend on the availability of instruments, reagents and expertise. Sri Lanka, as a non-endemic country, reported a few suspected cases following global spread, warranting genomic analysis for local characterization.

**Objective:** To detect the genome of the MPXV and perform phylogenetic analysis using Oxford Nanopore technology(ONT) sequencing to identify circulating clades in Sri Lanka.

**Methodology:** This retrospective study utilized laboratory datasets of anonymous swab samples of suspected MPXV infection received at National MPXV laboratory from May 2022 to May 2025. A commercially validated and in-house laboratory verified real-time polymerase chain reaction assay with internal control was used to detect the MPXV-DNA. All positives during the period were included to ONT-based whole-genome sequencing at National Reference Virology Laboratory, MRI, using a multiplex-amplicon sequencing ARTIC protocol, and data analysis was performed using EPI2ME software, to determine MPXV clades and phylogenetic analysis. Ethical approval was not obtained since laboratory generated datasets were analysed anonymazly.

**Results:** A total of 46 de-identified laboraotory datasets were analysed, of which seven(15.2%) revealed MPXV-DNA. All positives recorded a travel history. Of the seven positives, five yielded sufficient genomic material for sequenced and all were clustered within Clade IIb lineage.

**Conclusion & Recommendation:** In line with global findings, all sequenced MPXV samples belonged to Clade IIb, with no evidence of local transmission, indicated that all MPXV detected were imported. These findings underscored the importance of maintaining genomic surveillance to detect potential local transmission events in the future.

**Key words:** MPXV Genome detection, Phylogenetic analysis, ONT sequencing

## OP-31: SARS-CoV-2 Genomic Surveillance and Identification of Emerging Variants in Sri Lanka, 2025: A Report from the National Reference Virology Laboratory

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**Introduction:** SARS-CoV-2 has continued to evolve, with Omicron lineages exhibiting increased transmissibility and immune escape. Oxford Nanopore Technology (ONT) sequencing was established in Sri Lanka's state sector in 2021 to enhance genomic surveillance during and post pandemic to enhance awareness of circulating SARS-CoV-2 variants for public health response.This report summarizes the trends of Sri Lanka in the first half of 2025.

**Objective:** To evaluate SARS-CoV-2 genomic surveillance and identify circulating emerging variants in Sri Lanka during the first half of 2025.

**Methodology:** This retrospective study utilized laboratory datasets of de-identified samples received for genomic analysis to the National Reference Virology Laboratory from all state and private sector hospitals from January through June 2025. Based on major technical selection criteria 25 positive samples with sufficient viral loads were selected for sequencing. Samples were subjected to ONT-based whole genome sequencing using a multiplex amplicon sequencing ARTIC protocol and data analysis was performed using EPI2ME software (*pangolin assigner 3.1.16 version*) validated by the manufacturer and verified by the local testing laboratory to determine the circulating lineage/subvariants. Stanford University coronavirus variant detection database was applied to corroborate the results. Derived consensus sequences were uploaded into the GISAID-platform where the data were published globally. Ethical approval was not obtained since laboratory generated datasets were analysed anaonymazly.

**Results:** Analysis of 25 datasets of de-identified samples determined that all were Omicron subvariants.The majority belonged to JN.1 and its descendant lineages including XFG, MV.1, and LF.7, which accounted for over 80% of samples. Initial Omicron sublineages of BA.1.1 and BA.2 were also detected at lower frequencies.

**Conclusion & Recommendation:** During the first half of 2025, SARS-CoV-2 variants circulating in Sri Lanka were predominantly descendants of the Omicron JN.1 lineage. Findings mirror global trends and emphasized the importance of sustaining genomic surveillance to support updated diagnostic and vaccine strategies.

**Key words:** SARS-CoV-2 genomic surveillance, circulating emerging variants, ONT-based whole genome sequence

## OP-32: Decoding the Viral Etiology of Tongue Cancer: Evidence from a Systematic Review of HPV-Driven Molecular Pathways

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**Introduction:** Tongue cancer, a major subtype of oral squamous cell carcinoma, is increasingly associated with human papillomavirus (HPV) infection, particularly among individuals without traditional risk factors such as tobacco or alcohol use. While the role of HPV in oropharyngeal cancers is well established, its mechanistic contribution to tongue carcinogenesis remains less defined. Understanding the molecular basis of HPV-driven tongue cancer is critical for developing early diagnostic and therapeutic strategies.

**Objective:** To systematically review and synthesize current evidence on the molecular mechanisms underlying HPV-associated tongue cancer, focusing on viral oncoprotein-mediated pathway disruption, epigenetic regulation, immune evasion, and biomarker identification.

**Methods:** A systematic review was conducted following PRISMA guidelines and registered with PROSPERO (CRD42024593129). Databases searched included PubMed, Scopus, Web of Science, Dentistry & Oral Sciences Source, and AMED (search completed January 2024). Screening was performed using Rayyan software, and methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT). Eligible studies published 2014–2024 were narratively synthesized due to heterogeneity.

**Results:** From 3,142 records, 27 studies met inclusion criteria, most with high methodological quality (96.3%). Included studies comprised molecular, transcriptomic, and case-control designs across diverse geographic regions. HPV-positive tongue cancers consistently demonstrated E6/E7-mediated p53 and Rb suppression, activation of PI3K/Akt, Wnt/β-catenin, and NF-κB signaling pathways, and epigenetic alterations such as promoter methylation and miRNA dysregulation. Immune modulation through reduced antigen presentation and regulatory T-cell infiltration was frequent. Biomarkers including p16, FGFR3 mutations, miR-155, miR-185, miR-193b, and S100A7 showed diagnostic and prognostic potential.

**Conclusions & Recommendations:** HPV-positive tongue cancers exhibit distinct genetic, epigenetic, and immunologic alterations compared to HPV-negative tumors. These molecular insights highlight potential biomarkers and therapeutic targets for precision management. Future multicenter longitudinal studies with standardized methodologies should validate these biomarkers and clarify site-specific mechanisms. Integrating genomic, epigenomic, and immunologic data into clinical workflows may advance biomarker-driven screening and targeted therapy for HPV-associated tongue cancer.

**Keywords:** Human papillomavirus; Tongue cancer; Molecular mechanisms; Epigenetics; Biomarkers

**OP – 33: Salivary Detection of Helicobacter pylori in a Sri Lankan Cohort: A Potential Reservoir for Reinfection**

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**Introduction:** *Helicobacter pylori* colonizes the gastric mucosa of over half of the global population and causes diseases ranging from chronic gastritis to gastric cancer, a leading cause of cancer-related deaths worldwide. Despite standard therapy, eradication often fails, suggesting a possible extra-gastric reservoir, and the oral cavity has been proposed as a potential site. In a developing country like Sri Lanka, where infection prevalence is high, information on its presence in saliva is limited.

**Objective:** To detect and compare the presence of *H. pylori* in the saliva of adults with and without gastritis in a Sri Lankan population.

**Method:** A comparative cross-sectional study was conducted among adults with and without gastritis attending Teaching Hospital, Peradeniya. Gastritis was confirmed by endoscopic and histological analysis. Individuals with recent antibiotic use, pregnancy, smoking, and systemic diseases were excluded. Controls were selected based on the absence of gastric symptoms and no prior diagnosis of gastritis, though undiagnosed cases could not be completely excluded. Participants were selected by convenience sampling, and saliva samples were collected. DNA was extracted, and *H. pylori* was identified by polymerase chain reaction targeting the 16S rRNA gene, with positives confirmed by amplification of the *ureA* gene. Fisher's exact test was used for statistical analysis. Ethical approval was obtained from the Ethics Review Committee, Faculty of Dental Sciences, University of Peradeniya (ERC/FDS/UOP/I/2024/85).

**Results:** A total of 106 patients were included: 51 with gastritis (20 males, 31 females) and 55 without gastritis (28 males, 27 females). *H. pylori* was detected in 17 patients (16.04%), including 8 males and 9 females. Patients with gastritis had a higher detection rate (21.6%) than controls (10.9%), though this difference was not statistically significant (Fisher's exact test, $p = 0.93$). The odds of harbouring salivary *H. pylori* were 2.25 times higher among patients with gastritis compared to controls (95% CI: 0.81–6.31).

**Conclusions & Recommendations:** The detection of *H. pylori* DNA in saliva of both gastritis patients and healthy individuals suggests the oral cavity may act as a reservoir contributing to reinfection. Further large-scale, longitudinal studies are recommended to clarify this role.

**Keywords:** *Helicobacter pylori*, saliva, gastritis, reinfection, Sri Lanka

# OP 34: Acute Poisoning in Sri Lanka: Outcomes and the Role of Gastric Decontamination – A Multi-centre Study

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**Introduction:** Acute poisoning remains a major health issue in Sri Lanka, where early management strongly influences outcomes. Gastric lavage and activated charcoal are commonly used decontamination methods, particularly at first-contact facilities. However, studies have highlighted frequent unsafe and inappropriate practices, resulting in complications.

**Objective:** This assessed the epidemiological characteristics, usage and outcome of gastric decontamination, antidote administration, and patient outcomes following poisoning/medication-overdose.

**Methods:** A multi-centre descriptive cross-sectional study was conducted in 20 hospitals across the country among patients with acute poisoning/medication-overdose. Consecutive Patients >14 years of age admitted within the three-month period from August 2024 to October 2024 were recruited. Pregnant women and patients admitted after 24 hours of ingestion were excluded. A data collection sheet in the form of a Google Form was used. Demographic details, outcome

**Results:** A total of 759 patients were included; 58.1% were female. The mean age was 29.4 years (SD ±14.5; range 14–87). Nearly half (48.2%) had primary or up to ordinary-level education. Only 8.8% had a psychiatric illness, while 89.6% of ingestions were intentional self-harm. Poisonings occurring between 00:00 and 08:00 accounted for 15.6%. The mean time from ingestion to hospital arrival was 2.4 hours (IQR 1.4–5.0). Medications accounted for 61.5% of poisonings, with paracetamol comprising the majority (23.4%). Antidepressants and antipsychotics contributed 5.3%. agrochemicals accounted for 28.1%, corrosives and hydrocarbons 7.9%, and plants 5.3%. Spontaneous emesis occurred in 45.6%, while vomiting was induced in 2.9%. Gastric lavage and activated charcoal were used in 22%. Antidotes were administered to 5.5%. Outcomes included complete recovery in 88.4%. GL was performed in 37.5%(n=285) and AC in 49.4%(n=358) of cases. Clinical outcomes assessed included intensive-care unit(ICU) admission, mortality, organ-failure, and aspiration. ICU admission occurred in (8.6%,62) of GL and (8.6%, 62) of AC patients, with no difference between treated vs untreated groups (GL:9.4%vs.8.0%;$\chi^2$=0.445,p=0.505) and (AC:8.4%vs.8.8%;$\chi^2$=0.039,p=0.844). Mortality, organ-failure, and aspiration didnot differ significantly between GL groups (all p>0.05). Mortality and organ-failure showed trends toward lower rates with AC (0.6%vs.2.2%, and 3.3%vs.6.2%) respectively, but statistically not significance. Aspiration rates were unaffected by AC use (4.6%vs.5.4%; $\chi^2$=0.223,p=0.637). Median hospital stay was 3 days (range 0–26). There was a moderately strong positive correlation between time to admission and hospital stay.

**Conclusion & Recommendation:** Medication overdoses, particularly paracetamol, remain the leading cause of poisoning. Induction of vomiting persists despite harm, while gastric decontamination is underutilised. Timely hospitalisation and adherence to evidence-based decontamination are key to improving outcomes. Capacity-building and protocol reinforcement at peripheral hospitals are important.

**Key words:** Acute poisoning, medication-overdose, Gastric decontamination, Sri Lanka

## OP-35: Isolation Rate, Phenotypic Antibiotic Susceptibility, Presence of vanA and vanB Genes in *Enterococcus* Species Among Clinical Isolates in a Tertiary Care Hospital in Sri Lanka

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**Introduction:** Enterococci are commensals of the human gastrointestinal tract and skin. Once considered of low pathogenic potential, they have emerged as important nosocomial pathogens due to intrinsic resistance and the ability to acquire resistance to multiple antibiotics, including glycopeptides. Infections caused by multidrug-resistant *Enterococcus* species present limited therapeutic options, highlighting the need for continuous surveillance to support effective clinical management.

**Objective :**To determine the isolation rate, species distribution, phenotypic antibiotic susceptibility, and presence of vanA and vanB genes among *Enterococcus* species in clinical specimens from a tertiary care hospital.

**Methods**: This descriptive cross-sectional study was conducted from November 2024 to March 2025. Clinical specimens (blood, pus, urine, tissue, and body fluids) from inpatients and outpatients were included. Samples were cultured and presumptive *Enterococcus* isolates were identified to species level using the Vitek 2 GP system. Antimicrobial susceptibility testing was performed according to CLSI M100 (34th Edition) guidelines. Detection of vanA and vanB genes was carried out using a Vancomycin-Resistant *Enterococcus* (VRE) Multiplex Probe PCR Kit. Ethical clearance was granted by Ethics Review Committees of Colombo South Teaching Hospital (ERC:2094) and Postgraduate Institute of Medicine, University of Colombo (ERC/PGIM/2024/094).

**Results**: Of 5,082 specimens, 57 non-duplicate *Enterococcus* isolates were recovered (1.12%), predominantly from female patients (36, 63.2%) and urine samples (37, 64.9%). *E. faecalis* was the commonest (33, 57.9%), followed by *E. faecium* (22, 38.6%) and *E. avium* (2, 3.6%). Overall susceptibility to vancomycin, teicoplanin and linezolid was 86% ,91.2%, and 100% respectively. Ampicillin resistance was universal in *E. faecium* but observed in only 6.1% of *E. faecalis*. High-level gentamicin resistance was more frequent in *E. faecium* (45.5%). MIC testing showed *E. faecium* had higher $MIC_{90}$ for vancomycin (>256 µg/mL) and teicoplanin (27.2 µg/mL) than *E. faecalis* (1.0 µg/mL and 0.5 µg/mL respectively). Vancomycin MICs ranged 0.25 to >256 µg/mL for *E. faecalis* and 0.19 to >256 µg/mL for *E. faecium* with teicoplanin MICs ranging 0.19–32 µg/mL and 0.25–32 µg/mL, respectively. The vanA gene was detected in 8 of the 46 isolates tested by PCR (17.4%), while vanB was not detected. Among the *van*A-positive isolates 5 were *E. faecium* and 3 were *E. faecalis*.

**Conclusions & Recommendations:** This study identified *E. faecalis* and *E. faecium* as the main *Enterococcus* species, with higher resistance and multidrug resistance observed in *E. faecium*. Linezolid remained fully effective, while reduced susceptibility to vancomycin and complete ampicillin resistance in *E. faecium* were noted. The vanA gene was the predominant vancomycin resistance determinant, with no detection of vanB. Ongoing surveillance is essential to recognize the threat posed by multidrug-resistant *Enterococcus* species, particularly in nosocomial settings, and to guide targeted therapy and implement preventive measures. Genotypic susceptibility testing can complement phenotypic resistance detection, though careful interpretation is required. Routine screening for vanA-positive *Enterococcus* strains and antimicrobial stewardship programs are recommended to limit nosocomial spread.

**Keywords**: *Enterococcus* species, vancomycin resistance, vanA gene, antimicrobial susceptibility, Sri Lanka

# Session 7: Clinical & Biomedical

## Clinical Practice, Emergency Care & Hospital Outcomes

## OP -36: Ensemble Learning–Based Decision Support System for Optimizing Hemodialysis Outcomes in Patients with End Stage Renal Disease

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**Introduction**: End Stage Renal Disease (ESRD) poses significant challenges in resource-constrained settings, such as Sri Lanka, where hemodialysis (HD) services are restricted to manual monitoring. Optimizing key parameters of HD, including dry weight (DW), hemoglobin (Hb), and urea reduction ratio (URR), is paramount. Ensemble machine learning offers a resilient predictive approach, improving robustness and performance with limited data.

**Objective**: To develop and validate a machine learning model for predicting key parameters in HD therapy.

**Methods**: Data from hospital records comprising 3,856 HD sessions and 540 monthly investigations of 45 ESRD patients at Renal Care Unit, Teaching Hospital Peradeniya, were collected following ethical approval (2024/EC/49) and informed consent. Data were anonymised, preprocessed, cleaned, and split into training and testing sets (80:20) with patient-level grouping to prevent leakage. Multiple ensemble models (Balanced Bagging, Balanced Random Forest, Easy Ensemble, XGBoost, and LightGBM) were evaluated. Evaluation metrics (ROC-AUC, recall) were prioritized to address class imbalance, with accuracy reported for completeness. Balanced Bagging with LightGBM was selected for DW, LightGBM for URR, and an XGBoost–LightGBM ensemble for Hb following hyperparameter tuning with five-fold cross-validation.

**Results**: The DW model achieved a ROC-AUC of 0.64, accuracy of 0.71, and recall of 0.64, with arterial pressure and ultrafiltration rate as major predictors. The Hb ensemble attained a ROC-AUC of 0.73, accuracy of 0.68, and balanced precision-recall of 0.67, primarily influenced by Hb and albumin. The URR model recorded a ROC-AUC of 0.69, accuracy of 0.63, and recall of 0.68, driven by serum sodium and urea differences.

**Conclusions & Recommendations**: The system demonstrates reliable predictive performance despite data constraints, highlighting its potential as an automated, scalable clinical decision support tool for HD therapy. Future work should expand datasets, validate across multiple centers, and integrate the system into clinical workflows to assess real-time and long-term impact.

**Keywords**: Hemodialysis, End Stage Renal Disease, Ensemble Learning, Risk Prediction, Machine Learning

## OP-37: Complications, Awareness, and Self-Care Practices of Arteriovenous Fistula Among Haemodialysis Patients in Sri Lanka

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**Introduction:** Haemodialysis is an essential treatment for End Stage Renal Failure, with arteriovenous fistula (AVF) being the preferred method of vascular access due to its lower rates of long-term complications. Nevertheless, AVF complications such as infections, thrombosis, and stenosis continue to pose significant clinical challenges. Patient education and self-management strategies are crucial for reducing these risks, yet there is a lack of local data from Sri Lanka.

**Objective:** To assess the proportion of complications related to AVF and to evaluate the level of awareness in patients undergoing hemodialysis at the National Hospital of Sri Lanka (NHSL).

**Methods: A** descriptive cross-sectional study was carried out involving 120 haemodialysis patients at NHSL during August 2024. Data regarding patient demographics, comorbidities, AVF complications, awareness, and practices were gathered through a self-developed, expert validated, interviewer administered questionnaire. Participants were classified into categories of good, satisfactory, or poor levels of awareness and application of self-care practices. Statistical analysis was conducted using SPSS, employing chi-square tests to explore associations.

**Results:** The average age of participants was 49.9±14.1 years, with 73.3% being male. The primary causes of renal failure were hypertension (73.3%) and diabetes (66.7%). AVF-related complications were observed in 28.3% of the patients, with infections accounting for 14.2% and thrombosis for 8.3%. Good levels of awareness were found in 65% of participants, while 70% exhibited good practices, with average scores of 11.96/16 for awareness and 9.29/12 for practice. A significant correlation was identified between awareness and practice, and individuals aged 35–65 years showed significantly higher levels of knowledge.

**Conclusions & Recommendations:**

AVF complications are still common; however, the majority of patients displayed a good understanding of complications and effective self-care practices. Implementing structured educational programs and managing comorbidities may further enhance AVF outcomes and alleviate the pressure on healthcare resources.

**Keywords:** Hemodialysis, arteriovenous fistula, Sri Lanka

**OP 38: Patterns and Outcome of Pediatric Surgical Admissions at National Hospital Kandy: A Retrospective Study**

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**Introduction:** Pediatric surgical admissions constitute a significant aspect of healthcare in Sri Lanka, including conditions such as injuries, congenital anomalies, gastrointestinal disorders, urinary tract conditions, and surgical infections. Studying patterns and outcomes is essential for improving care delivery and resource planning.

**Objectives:** To describe the demographic and clinical patterns and outcomes of pediatric surgical admissions among patients aged 0-14 years at the National Hospital, Kandy (NHK).

**Methods:** A descriptive cross-sectional study was conducted in surgical units at NHK from May 2023 to May 2024. Secondary data were obtained from the admission books, including demographic details, reasons for admission, length of stay, and outcomes. All admissions to the pediatric surgical unit were included. Ethical approval was obtained from the Ethics Review Committee, Faculty of Allied Health Sciences, University of Peradeniya.

**Results:** Of 2,527 patients, males predominated (67%; male-to-female ratio 2:1) with a mean age of 6.8 years (SD = 4.2). The most common reason for admission was injury (42.9%), followed by gastrointestinal conditions (20.2%), planned surgeries (19.4%), and surgical infection conditions (10.3%). Overall, 54.1% were discharged with full recovery, 36% required further follow-up, and 41% underwent surgery. The mean hospital stay was 3.1 days (95% CI: 2.9-3.3) with a low surgical site infection rate of 0.5% (95% CI: 0.2–0.7). Male children were more frequently admitted across all categories, particularly for urinary tract conditions (91.8%) and planned surgeries (75.7%), indicating a significant gender disparity in admission patterns.

**Conclusion & Recommendations:** Most admissions were due to injuries and gastrointestinal conditions, with favorable recovery rates and minimal post-operative complications. The results provide baseline data to support future hospital planning aimed at improving surgical management, promoting early interventions, and strengthening injury prevention programs. Public health initiatives should focus on reducing pediatric injury cases through education, safer environments, and regulations to enhance road safety.

**Keywords:** Pediatric, Surgical admissions, Outcome

## OP- 39: Efficacy of protocol-based blood pressure management and digital app-based patient follow-up in the outpatient settings of secondary/tertiary-care hospitals in Sri Lanka

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**Introduction:** Despite established guidelines, blood pressure (BP) control remains suboptimal worldwide, largely due to poor implementation. To address this, the Ministry of Health, Sri Lanka, introduced protocol-based BP management (PB-BPM) with digital app-based patient follow-up (DAB-PF) in selected hospitals from 2024.

**Objectives**: To assess the efficacy of PB-BPM and DAB-PF in improving BP control in outpatient clinics of secondary/tertiary hospitals in Sri Lanka

**Methods**: Consecutive patients attending selected outpatient clinics were initiated on PB-BPM and followed every 2 months. Controlled BP was defined as <140/90 mmHg per national guidelines. Mean BP, BP reduction, and the proportion achieving target BP at 12 months were compared with baseline. Patient satisfaction was rated on a 10-point Likert scale, and compliance was assessed through a questionnaire. Ethical approval for the study was obtained from the Ethics Review Committee of the Faculty of Medicine, University of Kelaniya.

**Results**: A total of 7,179 patients were enrolled across Gampaha, Colombo, and Kandy districts. Complete 12-month follow-up data were available for 1,261 patients (74.5% female; mean age 63.2±10.6 years). Baseline mean SBP was 134.9 mmHg (95% CI: 133.9–135.9), with 74.2% controlled. At 12 months, mean SBP reduced to 132.2 mmHg (95% CI: 131.4–132.9), with 83.9% controlled. The mean SBP drop was 2.79 mmHg. Improvements in mean SBP and BP control rates were statistically significant (p<0.001, paired t-test; p<0.001, McNemar test). Patient satisfaction remained high (8.9/10 at baseline vs. 9.0/10 at 12 months, p=1.000). However, treatment compliance declined, with more missed doses and self-directed dose reductions reported.

**Conclusion & Recommendations**: The guideline-based BP management programme and digital app-based patient follow-up improved BP control in this cohort of outpatients managed at secondary/tertiary-care hospitals in Sri Lanka. Expansion of protocol-driven BP management with digital follow-up to other Sri Lankan hospitals and replication in similar settings is recommended to strengthen hypertension control

**Keywords:** Hypertension, Blood pressure control, Digital follow-up, Protocol-based management, Patient compliance

**OP-40: A survey on Knowledge and Practice on main principles in Blood Pressure management of doctors in Sri Lanka**

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**Introduction:** Blood pressure (BP) control remains suboptimal globally. Less up-to-date knowledge and the inertia of doctors are identified as possible reasons.

**Objectives:** We aimed to assess the knowledge and practices of doctors on key principles of BP management in Sri Lanka and to compare the findings in 2024 and 2025.

**Methods:** We conducted two hybrid update lectures on the latest BP management guidelines from the 2023 National Guideline, held on World Hypertension Day in 2024 at the Colombo North Teaching Hospital and in 2025 at the National Hospital of Sri Lanka. These sessions highlighted two key practices: initiating non-pharmacological management followed by a low-dose single antihypertensive agent for low-risk adults with BP <160/100 mmHg and initiating low-dose dual-antihypertensive therapy for patients with BP ≥160/100 mmHg who are not frail or aged ≥80 years. Online surveys were administered before the 2024 lecture and after the 2025 lecture, using two case-based questions to assess adherence to Practices 1 and 2. Responses from 2024 and 2025 were compared using the Two-proportion z-test for independent samples. Ethical approval was obtained from the Faculty of Medicine, University of Kelaniya (P16610512024), and participation was voluntary.

**Results:** In 2024, 80 doctors responded to the survey (42.5% medical officers and 57.5% pre-intern doctors), while in 2025, 167 doctors participated (71% medical officers, 10.1% postgraduate trainees, and 8.9% pre-intern doctors). Correct response rates for 2024 versus 2025 were 100% vs. 94.7% for Practice 01 ($p = 0.08$) and 10% vs. 65.7% for Practice 02 ($p < 0.0001$). Following the 2025 session, 146 participants (86.4%) reported improved knowledge that translated into changes in their clinical practice. No significant associations were identified between correct responses and participants' designation, gender, or age.

**Conclusion:** Conducting regular update lectures on the latest blood pressure management improved doctors' knowledge, leading to better practices. However, about one-third of doctors were still not convinced to initiate dual-antihypertensive therapy in eligible patients. This highlights the need for conducting regular programs to enhance doctors' knowledge of the latest guidelines.

**Key words**: Hypertension Management, Clinical Guidelines, Medical education, Doctors' knowledge

# Session 8:
# Cross-Cutting Themes & Ayurveda

**OP 41: Integration of Disease Registries into Electronic Medical and Health Records: Alignment with the Sri Lanka Digital Health Blueprint**

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**Introduction:** Disease registries are vital for clinical care, public health surveillance, and health policy development. In Sri Lanka, siloed systems and limited integration with Electronic Medical Records (EMRs) and the National Electronic Health Record (NEHR) have led to duplication, inefficiencies, and underutilization of data. Strengthening interoperability through the National Digital Health Blueprint (NDHB) could improve data quality and system efficiency.

**Objective:** To explore the feasibility and effectiveness of integrating disease registries into EMRs and EHRs in accordance with the Sri Lanka National Digital Health Blueprint architecture.

**Methods:** A qualitative design was employed using ten key informant interviews with administrators, consultant community physicians, consultant health informaticians, and data entry personnel. Data were collected between August and October 2024. Ethical approval was obtained from the Ethics Review Committee, Postgraduate Institute of Medicine, University of Colombo. Thematic analysis was performed using ATLAS.ti software.

**Results:** Two main integration pathways were identified: (1) direct linkage between disease registries and EMRs for real-time data capture, and (2) integration through the NEHR for centralized, validated, and standardized data access. Almost all respondents favored the NEHR-based model, citing its governance and validation advantages, though a hybrid approach was considered necessary during transition. Key enablers included standardized terminologies, metadata structures, and governance frameworks, while challenges involved EMR variability, limited infrastructure, and absence of standard data dictionaries.

**Conclusion & Recommendations:** Integration of disease registries with EMRs and the NEHR is feasible and aligned with the NDHB framework. A phased implementation is recommended, prioritizing high-burden disease registries, supported by national standards for data capturing, data exchange and secondary use. Strong governance measures are required to safeguard data security, privacy, and quality. Leveraging the NEHR as the central repository will minimize manual entry and duplication, while capacity building among healthcare professionals will ensure smooth adoption of integrated digital workflows.

**Key words**: Disease Registries, Electronic Health Records, Interoperability, Digital Health Blueprint

## OP-42: Shaping Factors of Knowledge and Perceptions of Traditional Medicine Among Middle-Adolescent Students in National Schools of Trincomalee Town and Gravets, Sri Lanka

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**Introduction:** Traditional Medicine (TM), defined by the World Health Organization, is 'the sum of knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health and the prevention, diagnosis, improvement or treatment of physical and mental illness.' TM remains an integral aspect of health practices in Sri Lanka. Understanding the factors influencing the awareness of TM among adolescents is essential for health promotion through informed health behaviors.

**Objective:** The study aimed to identify factors influencing knowledge and perception of TM among middle-adolescent students in National schools in Trincomalee Town and Gravets, Sri Lanka.

**Methods:** A cross-sectional study was conducted among 372 students selected through random sampling, across six National schools. Data were collected on knowledge, usage, sociodemographic variables, and sources of information, including the influence of schools, across all ethnic groups. Knowledge and perception were evaluated using Likert scale. The data were analyzed using Chi-square tests and Binary logistic regression.

**Results:** Nearly all students (96.5%) had perception with TM. Among the participants, 84.4% (n=303) reported using TM, with 13.2% (n=40) as frequent users (P=0.267). Over half (53.76%; n=200) found TM beneficial (P<0.001), primarily due to its safety and minimal side effects (50.8%; n=189). Usage of home remedies is higher (39.24%; n=146) when compared with seeking treatment from traditional physicians (9.14%; n=34) and health care facilities (28.5%; n=106). Additionally, 81.7% (n=255) used TM for prevention, chiefly for immunity (n=179; 48.11%) and hair loss (n=134; 36%). No gender differences were observed in knowledge ($P$=0.996) or frequency usage ($\chi^2$=3.96, $P$=0.411). Ethnicity showed a significant association ($P$=0.006, $R^2$=3.86%). Significant knowledge sources were family (OR=1.997, $P$=0.007), prior treatment (OR=2.183, $P$=0.007), and books (OR=4.162, $P$<0.001). In contrast, parental education was not ($P$>0.05) significantly associated. Self-experience emerged as the significant predictor of TM use (OR=3.89, $P$=0.001). Neither school awareness initiatives nor the formal curriculum contributed to students' knowledge of TM.

**Conclusion & Recommendations:** The study concluded that personal experience and family primarily drive TM use among adolescents, outweighing gender, ethnicity, parental education, or school initiatives and curriculum.TM knowledge should be integrated into the curriculum to promote the advancement of TM and foster healthier future generations.

**Keywords:** Adolescents, Sri Lanka, Traditional Medicine, Usage patterns, School students

## OP 43: Effectiveness of disaster management interventions to enhance disaster preparedness among healthcare workers: A systematic review

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**Introduction:** Globally the frequency of natural as well as man-made disasters have increased. Health Care workers(HCW) play a frontline role during disaster management. HCW acquiring adequate knowledge, skills and confidence to respond effectively can be crucial in mitigating disasters. Aim of this study was to evaluate the effectiveness of the disaster preparedness training interventions for HCW.

**Methods:** A total of 2303 articles from 2015 to 2025, were found initially through searching key terms such as "effectiveness", "disaster preparedness", "interventions" and "health care workers" on PubMed (285), Cochrane (40), clinical keys (84), Hinari, (65), EBSCO (923) and SCOPUS (906). Following deduplication there were 1670 articles. Studies involving healthcare workers who underwent disaster preparedness training, compared to a control group were included and articles published in non-English, studies without intervention evaluation were excluded. Screening questions used, whether subjected to a training program, that enhanced their knowledge on disaster preparedness, among health care workers compared to a control group. Articles were screened by two independent reviewers, with conflicts settled by a third. Study design, participants, intervention, and outcomes were extracted by two reviewers independently. Risk of bias was assessed with the RoB2 tool for randomized controlled trials (RCTs). Meta-analysis was not performed due to clinical heterogeneity. PROSPERO ID is CRD420251026794.

**Results:** Eleven studies were selected after two selection-rounds. All the articles selected were randomized control studies, which had low risk of bias. Interventions with simulation-based training and multi-component training such as drills, role play and lectures showed improved knowledge($p<0.001$), competency($p=0.001$) and self-confidence($p<0.001$) among HCW. Studies comparing interventions, showed simulation based or role-play can improve knowledge better than lectures($p<0.001$). However, evidence remains limited by small sample sizes and short follow-up periods.

**Conclusions:** Studies have shown, training programs have resulted in significant improvement in knowledge, disaster literacy, and self-efficacy. It has further improved disaster preparedness, competency, and self-confidence.

**Key words:** disaster preparedness, disaster responsiveness, disaster training, self-efficacy, health care workers

## OP 44: Informed and Involved: Satisfaction on Obtaining Consent Before Major Surgery in a Tertiary Care Setting

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**Introduction:** Informed surgical consent (ISC) is a vital ethical and legal requirement in surgery but Sri Lankan data on patient satisfaction with ISC process is limited.

**Objective:** To describe the satisfaction on obtaining ISC for major surgical procedures and its associated factors among patients in a selected tertiary care hospital in Sri Lanka.

**Methods:** A descriptive cross-sectional study was conducted from June 1st to November 1st in 2024 using a pre-tested interviewer-administered questionnaire among 357 adult patients following major surgery at Colombo South Teaching Hospital, selected through consecutive sampling. Satisfaction on ISC procedure was measured using 10-items on a 5-point-Likert scale(1='Very dissatisfied', 5='Highly satisfied') converted to a 100% scale and categorized as >75%='Highly satisfied', 50-75%='Satisfied', and <50%='Poorly satisfied'. Association between independent variables and patient satisfaction were determined using the chi-squared test. Level of significance was $p<0.05$. Ethical approval was obtained from the Research Ethics Committee of the University of Sri Jayewardenepura (REC/Com Med 30).

**Results**: The majority were between 30-65 years (68.1%), females (52.7%), who underwent elective surgeries (86.8%). The mean satisfaction with ISC process was 86.88% with majority (85.7%) being 'Highly satisfied', 9.8% 'Satisfied' and 4.5% being 'Poorly satisfied'. Socio-demographic factors associated with higher patient satisfaction on ISC were younger age (p=0.001), Muslim ethnicity (p=0.022), higher educational level (p=0.002), and professional occupation (p=0.008). Regarding the ISC process itself, using the preferred language (p<0.001), acknowledgement of the consequences of not undergoing surgery (p<0.001), explaining the risks (p<0.001), addressing patient queries (p<0.001) and the longer duration of ISC process (p=0.039) were found to be statistically significantly associated with higher satisfaction.

**Conclusion & Recommendations:** Despite the majority being 'Highly satisfied', findings suggest areas for improvement such as communication skills and time allocation of healthcare providers, which warrant further attention. Improve ISC by ensuring adequate time allocation, tailoring to patient's literacy and culture to enhance patient satisfaction.

**Key words:** Informed surgical consent(ISC), Obtaining consent, Satisfaction

## OP-45: A Dual-Modal Machine Learning Pipeline - a highly sensitive AI tool for β-Thalassemia Screening using Red Blood Cell Indices and Smartphone-Captured Blood Smear Images

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**Introduction:** Thalassemia is the most prevalent single-gene disorder in Sri Lanka, imposing a significant socioeconomic burden. Early carrier detection is essential for genetic counseling and prevention of thalassemia major births. Current screening relies on red cell indices, while blood smear examination, though informative, is impractical for large-scale screening. Confirmatory tests like hemoglobin electrophoresis and genetic analysis are expensive and often unavailable in low-resource settings.

**Objectives:** This study aims to develop a machine learning–based automated screening tool integrating red cell indices and blood smear image analysis to improve carrier detection and enable mass screening during routine FBC testing.

**Methods:** A cross-sectional study was conducted at the National Thalassemia Centre, Kurunegala; after excluding cases without HPLC confirmation or with other hemoglobinopathies, the final sample comprised 152 participants (54 confirmed β-thalassemia trait, 98 negative). FBC data were anonymized, and smears were captured using smartphone and microscope imaging. Stratified sampling split 30% of data for independent testing, with the remaining 70% used for 5-fold cross-validation during training. Data balancing and image augmentation (rotation, flipping, brightness variation) addressed class imbalance and overfitting. FBC features were classified using a Multi-Layer Perceptron (MLP, scikit-learn), while smears were analyzed with a transfer learning–based VGG-16 CNN (TensorFlow/Keras). A two-step pipeline applied smear analysis only to FBC-negative cases.

**Results:** The MLP achieved 96% sensitivity (95% CI: 0.87–1.00) and 97% specificity (95% CI: 0.91–0.99). The VGG-16 CNN reached 96% sensitivity (95% CI: 0.87–1.00) and 66% specificity (95% CI: 0.56–0.76). The combined pipeline achieved 100% sensitivity (95% CI: 0.93–1.00) and 65% specificity (95% CI: 0.55–0.75), reducing smear preparations by 39.6%.

**Conclusion and Recommendations:** The dual-modal system provides a sensitive, resource-efficient approach for β-thalassemia screening. With further larger, independent, multi-centre validation, it could be integrated into laboratory workflows to expand coverage in Sri Lanka, while ongoing evaluation will ensure generalizability and support policy integration.

**Keywords:** Thalassemia, Screening, Machine learning, Artificial Intelligence, Image Analysis

# Abstracts for Free Paper Sessions
# Poster Presentations

# Poster Presentations
# Public Health Category

**PP 1 (ID 183): Knowledge, Attitudes, and Preventive Practices on Rabies among the General Community in the Horana MOH Area.**

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**Introduction:** Rabies is a fatal yet preventable zoonotic viral disease transmitted primarily through the saliva of infected mammals, especially dogs. It remains endemic in Sri Lanka and persists as a significant public health burden despite available prophylaxis. The Horana MOH area was selected due to its disproportionately high incidence of reported rabies cases.

**Objective**: The study aimed to assess knowledge, attitudes, and preventive practices regarding rabies among the general community in the Horana MOH area.

**Methods:** A community-based cross-sectional survey was conducted from June to July 2024 among 423 adults residing in the Horana MOH area, selected through systematic random sampling. Data were collected using a pilot-tested structured questionnaire assessing knowledge, attitudes, and preventive practices. Scores were categorized as good or poor based on mean cut-off values. Inclusion criteria specified participants aged 18-65 years. Data were analyzed using SPSS version 24. Ethical clearance was obtained from the Ethics Review Committee of National Institute of Health Sciences (ERC no.NIHS/ERC/24/15,dated 31 May 2024), and informed written consent was obtained from participants.

**Results:** All participants (100%) had heard of rabies, mainly through mass media (61.2%). Among 423 respondents, 52.2% were pet owners. Good knowledge was reported in 56.3%, while 43.7% demonstrated poor knowledge. A similar trend was observed in attitudes (53.4% good) and preventive practices (49.2% good). Despite satisfactory awareness, preventive behaviors such as regular pet vaccination and post-bite care were inadequate.

**Conclusion & Recommendations:** The study reveals that although general awareness and attitudes towards rabies are satisfactory, preventive practices remain sub-optimal. Community education programs delivered through MOH clinics and media- emphasizing responsible pet ownership, timely vaccination, rabies vaccination safety in pregnancy, lactation and infancy, and immediate post-exposure care- are recommended. Strengthening enforcement of rabies control regulations and augmenting resource allocation for sterilization initiatives could further enhance prevention efforts.

**Keywords:** Knowledge, Attitude, Practice, Rabies

**PP 02 (ID 135): Post-COVID-19 Syndrome among Survivors of COVID-19: A Prospective Cohort Study in a Tertiary Care Hospital in Sri Lanka**

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**Introduction:** According to NICE guidelines, "Post-COVID-19 syndrome" is defined as "*signs and symptoms that develop during or after an infection consistent with COVID-19, continue for more than 12 weeks and are not explained by an alternative diagnosis*". National Hospital Kandy, being the second-largest hospital in the country, had a large number of COVID-19 admissions.

**Objective:** This study aimed to determine the prevalence of post-COVID-19 syndrome among patients treated at the National Hospital Kandy and to identify associations and the impact of acute disease severity on long-term outcomes.

**Methods:** A prospective cohort study was conducted involving 386 patients who were treated for COVID-19 between June and November 2021. Participants were followed up 12 weeks post-discharge through structured telephone interviews to assess the presence of persistent symptoms. Data on demographics, comorbidities, acute disease severity, and post-COVID-19 symptoms were analysed using descriptive statistics and chi-square tests. Ethical approval was obtained from the ethics review committee of the National Hospital, Kandy.

**Results:** Out of 386, 56% were females, with a mean age (SD) of 53.8 (18.4) years. Two-thirds of the population had mild disease. Fifty-one per cent reported at least one post-COVID-19 symptom at 12 weeks. The most prevalent symptoms were fatigue (34.2%), dyspnoea (27.5%), and musculoskeletal pain (20.2%). Age was significantly associated with the incidence of post-COVID symptoms ($p<0.001$), particularly dyspnoea, fatigue, and musculoskeletal pain. Females reported higher rates of fatigue and musculoskeletal symptoms. Pre-existing comorbidities, such as diabetes, hypertension, dyslipidemia, and ischemic heart disease, were significant risk factors for persistent symptoms. Acute disease severity was positively correlated with the prevalence of post-COVID-19 syndrome, especially dyspnoea ($p<0.001$) and any post-COVID symptoms ($p<0.001$). Nearly 7% have not returned to work or worked reduced hours due to post-COVID symptoms.

**Conclusions & Recommendations:** Post-COVID-19 syndrome affects more than half of survivors, with a higher risk among older adults, females, and those with pre-existing conditions. Post-COVID symptoms have affected the workforce significantly. These findings highlight the need for comprehensive follow-up care and support systems for COVID-19 survivors.

**Keywords:** COVID-19, post-COVID-19 syndrome, incidence, Sri Lanka, cohort study

**PP 2A (ID-133)- Adverse events following immunization of children up to 5 years: Knowledge, practices and associated factors for knowledge among mothers attending pediatric clinics at a selected teaching hospital in Sri Lanka**

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**Introduction:** Immunization is a vital public health measure against childhood infectious diseases. Adverse events following immunization (AEFI) are defined as any untoward medical occurrence after vaccination, whether causally related or not.

**Objective:** To determine the knowledge, practices, and associated factors for knowledge on AEFI among mothers with children up to five years of age attending pediatric clinics at a teaching hospital in Western Province.

**Methodology:** A descriptive cross-sectional study was conducted using a pre-tested, interviewer administered questionnaire among 270 mothers. Simple random sampling was employed. Participants were grouped to poor (<40%), average (40–60%), good (60–80%), or excellent (>80%) categories based on their knowledge. Statistical analysis was performed using SPSS version 28, and associations between knowledge levels and sociodemographic factors were tested using Chi-square tests. A p value <0.05 was considered statistically significant.

**Results:** Among mothers, 64.8% (n=175), 27% (n=73) and 8.2% (n=22) had average, good and poor knowledge respectively. The Child Health Development Record was the main source of information by 84.4% (n=228) mothers. Only 52.2% (n=141) participants recognized anaphylaxis as a severe AEFI. Higher levels of education and income were significantly associated with better knowledge (p<0.001), whereas maternal age and number of children showed no significant association. Majority (98.1%, n=265) reported they would seek medical care for AEFI, and 96.3% (n=260) mentioned that they would use antipyretics to manage post-vaccination fever.

**Conclusions & Recommendations:** Most mothers demonstrated average knowledge of AEFI, with level of education and income as significant determinants. Health seeking practices were generally appropriate. However, knowledge gaps exist in recognizing life-threatening reactions and reporting pathways. Structured awareness programmes, special outreach for low-income mothers, and strengthened post-vaccination guidance by healthcare providers are recommended. Further research in rural settings is needed to capture broader perspectives.

**Keywords:** Adverse events following immunization, pediatric clinics, maternal knowledge, practices, Sri Lanka

## PP-03 (ID 220): Functional Capacity and Its Determinants among Young Elderly in the MOH Area, Kalutara.

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**Introduction:** Sri Lanka faces rapid population ageing, with elderly individuals (≥60 years) comprising a growing proportion of the population. Declining functional capacity in later life significantly impairs Health-Related Quality of Life (HRQoL). Although numerous modifiable determinants of functional capacity exist and are suitable for community-level interventions, evidence on the current status among young elderly (60–74 years) remains limited. This study aimed to evaluate functional capacity and identify its key determinants among community-dwelling young elderly in the Medical Officer of Health (MOH) area, Kalutara.

**Objective:** To describe the level of functional capacity and its associations among young elderly people residing in the MOH area of Kalutara.

**Method:** A cross-sectional, community-based survey targeted elders aged 60–74 years residing in the MOH area, Kalutara. Ethical approval was granted by the Ethics Review Committee of National Institute of Health sciences, Kalutara. Functional capacity was measured using the Instrumental Activities of Daily Living (IADL) scale. Sociodemographic, economic, and health-related factors were assessed via an expert-validated questionnaire. Cluster sampling was employed, treating each Public Health Midwife (PHM) area as a cluster, with random selection of participants within clusters. Data analysis utilized SPSS version 23; bivariate associations were examined using Chi-squared tests, and multivariate relationships were determined through multiple logistic regression, with statistical significance at $p < 0.05$.

**Results:** Of 504 participants interviewed, 45.1% (95% CI: 40.3–49.9) exhibited poor functional capacity. Bivariate analysis revealed significant associations with advanced age (p=0.018), ethnicity (p<0.001), low education (p=0.029), unemployment (p<0.001), low income (p<0.001), cohabitation (p=0.034), polypharmacy (p=0.01), poor sleep quality (p<0.001), poor perceived health (p<0.001), female gender (p<0.001), childlessness (p=0.047), and house ownership (p=0.003). Multivariate analysis identified.

**Conclusions and Recommendations:** Over 45% of young elderly in the Kalutara MOH area had poor functional capacity, associated with ethnicity, income, gender, and perceived health status are the main determinants. Community-based health promotion and social support interventions should target socioeconomically vulnerable elderly to maintain independence and improve functional capacity.

**Key words:** Functional capacity, Instrumental Activity of Daily Living, Kalutara, Young Elderly

**PP 04 (ID 223): Determination of the emergence rate of *An. stephensi* from wells in Jaffna District Sri Lanka**

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**Introduction**: *Anopheles stephensi* is an invasive urban malaria vector recently detected in Sri Lanka. Domestic wells are known breeding sites, but data on adult emergence from these habitats remain limited. This study determines the daily emergence rate of *An. stephensi* from wells.

**Objective**: To determine the daily adult emergence rate of An. stephensi from domestic wells in the Point Pedro MOH area, Jaffna District.

**Method:** Entomological surveys were carried out in Point Pedro from April to May 2025. Eight wells positive for *An. stephensi* larvae were purposively selected. An emergence trap was installed by fixing a window trap to each well and covering the remaining opening with a mosquito net. Traps were maintained for five days per well, and emerging mosquitoes were collected daily. Specimens were identified using standard morphological keys. Daily emergence counts were recorded, and the mean emergence rate for each well was calculated by dividing the total number of adults by five (5 days).

**Results**: The mean emergence rate across wells ranged from 0 to 2.0 adults per well per day. The maximum emergence observed was 5 adults from a single well in one day. Seven of the eight wells produced adults throughout the observation period, while one well recorded no emergence.

**Conclusion & Recommendation**: Domestic wells in Point Pedro act as persistent breeding sites for *An. stephensi*, even within short monitoring periods. Variability in emergence among wells indicates that local environmental conditions influence vector productivity. : Community-based well maintenance, cleaning, and water management integrated into the existing malaria surveillance programme are recommended to reduce *An. stephensi* breeding and support the prevention of malaria re-establishment in Sri Lanka.

**Keywords:** *An. stephensi*, Malaria, Sri Lanka.

## PP-05 (ID139): Anopheles stephensi in Urban Jaffna: Entomological Insights and Associations with Rainfall

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**Introduction:** Sri Lanka achieved WHO malaria-free certification in 2016; however, the threat of re-establishment persists due to receptivity and importation risks. *Anopheles stephensi*, an efficient urban malaria vector in South Asia which thrives in urban environments, increasing receptivity risk. It's occurrence in Urban areas like Jaffna heightens concerns for malaria re-establishment when coupled with importation risk.

**Objective:** To determine *An. stephensi* occurrence and correlations with rainfall in Jaffna District to assess its potential role in urban settings.

**Methods:** Bi-monthly entomological surveys (n=20) were conducted from January 2018 to December 2020 in Nawanthurai PHI area. Adult collections included cattle baited trap (CBTC; 153 traps), human landing catches indoors (HLC-indoor; 633 man hours) and outdoors (HLC-outdoor; 655 man hours), and indoor hand collections (IHC; 179 man hours). Larval surveys (83734 dips) searched for *An. stephensi* breeding sites. Larval densities were correlated with current month rainfall (RFLag0) and one month lag rainfall (RFLag1) using Spearman's rank order correlation. Monthly rainfall data were obtained from the Department of Meteorology for Mannar District.

**Results:** A total of 2243 *Anopheles* females from 11 species were collected in adult collections. *An. stephensi* females constituted 8% (n= 178) of CBTC catches, 5% ( n=3) in outdoor HLC, 20% (n=2) in indoor HLC, and 20% (n=1) in IHC. Mean adult densities were 1.08 per trap (CBTC), 0.004 per man-hour (HLC outdoors), 0.003 per man-hour (HLC indoors), and 0.005 per man-hour (IHC). Among 5584 anopheline larva from 12 species collected, 51% (n=2717) were *An. stephensi* with a mean larval density of 3.34 per 100 dips. A significant correlation was observed of the larval density with RFLag0 (r= 0.50, p = 0.012) and no significant association for RFLag1 (r = 0.32, p = 0.121).

**Conclusions & Recommendations:** Occurrence of adult and larval *An. stephensi* in Nawanthurai confirms its establishment and positive association with rainfall, shows climatic influence on it's abundance. Sustained entomological surveillance is crucial to monitor *An. stephensi* spread in urban areas and larval source management should be prioritized.

**Key words:** *Anopheles stephensi*, urban malaria, rainfall.

**PP-06 (ID 217): Influence of Agricultural Fertilizers on the Resistance Status of *Anopheles subpictus* to Lambdacyhalothrin in Paddy Field Ecosystems.**

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**Introduction**: Insecticide resistance among malaria vectors presents a major challenge to control programs. Agricultural runoff can expose mosquito larvae to sub-lethal agrochemical doses, influencing detoxification enzyme activity and resistance. In Sri Lanka, the recent shift from chemical to organic fertilizers offers an opportunity to study how agricultural practices affect the susceptibility of *Anopheles subpictus* in Mahiloor, Kaluwanchikudy MOH area, Batticaloa District, where paddy cultivation dominates.

**Objective**: To evaluate the effect of fertilizer type (chemical vs. organic) on the susceptibility of *An. subpictus* to Lambdacyhalothrin 0.05% in paddy field ecosystems.

**Methods**: WHO standard susceptibility tests were conducted between March 2021 and August 2025. Each test was performed with four replicates of 25 unfed female *An. subpictus* aged 3–5 days, following WHO guidelines. Mortality rates were recorded during periods of chemical and organic fertilizer use at 0.05% and 0.25% Lambdacyhalothrin concentrations. Resistance status was interpreted based on WHO criteria: ≥98% mortality (susceptible), 90–97% (possible resistance), and <90% (resistant).

**Results**: During the chemical fertilizer period (2021), mean mortality at 0.05% Lambdacyhalothrin was 56.4 ± 0.5%, indicating resistance. At 0.25%, mortality increased to 92%, suggesting possible resistance. Following the shift to organic fertilizers (2022 onwards), susceptibility improved progressively 78 ± 2.3% in 2022, 98.9 ± 0.8% in May 2025, and 99% in August 2025 at 0.05% Lambdacyhalothrin, indicating a transition from resistance to full susceptibility.

**Conclusion & Recommendations**: The findings indicate that agricultural fertilizer type influences insecticide resistance in *An. subpictus*. The transition to organic fertilizers was associated with a restoration of susceptibility to Lambdacyhalothrin, suggesting environmental agrochemical interactions may modulate resistance mechanisms. Integrated vector management programs should consider agricultural practices, particularly fertilizer type, in resistance mitigation strategies. Further molecular studies are recommended to elucidate the mechanisms linking fertilizer use and mosquito susceptibility.

**Keywords**: *Anopheles subpictus,* Lambdacyhalothrin, insecticide resistance, chemical fertilizers, organic fertilizers.

**PP-07 (ID 138): An analysis of domestic garbage disposal and management practices in a Divisional Secretary Area in Southern Sri Lanka**

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**Introduction:** Improper household waste disposal contributes to mosquito breeding and environmental pollution, posing major health risks in semi-urban Sri Lankan communities.

**Objective:** To understand domestic garbage disposal and management practices in a Divisional Secretary Area in Southern Sri Lanka.

**Methods:** Community based descriptive cross-sectional study was conducted in Bope-Poddala Divisional Secretary area of Galle District. The sample consisted of 150 households, considering feasibility and time and resource constraints and it was selected through multi-stage cluster randomized sampling. First 10 Grama Niladiri divisions were selected purposively to represent different socio-economic and ethnic strata. A structured, pre-tested interviewer administered questionnaire and observation check list were used to gather data. Trained teams of pre-med students visited households to collect data. Ethical clearance was obtained from ERC- RDHS Galle and informed written consent was obtained from participants.

**Results:** A total of 150 households were visited. Majority of households were practicing open burning of polythene/plastic (77%) while only 17% handed over that to local government tractor. In 79% of household's polythene and plastic waste were separately collected. However, only 35% were practicing the separation of clean and unclean polythene/plastic. Apparently there was no system to remove glass, metal and e-waste and they were stagnating in many households, especially in backyards.

**Conclusion & Recommendations:** Most households lacked proper waste segregation and relied on open burning. Strengthening community awareness and establishing collection systems for recyclables and e-waste are essential. LGs should plan and implement process to collect glass, metal and E-waste stagnating in backyards which can create potential threats for dengue. Collaboration between Local Government Authorities and Public Health Inspectors could improve community-level waste segregation and collection practices.

**Key words** - Domestic garbage, disposal practices

## PP-08 (ID 166): An assessment of Laboratory Turnaround Time in a secondary level hospital in Southern Sri Lanka

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**Introduction:** Timely availability of lab tests to the clinician is crucial in optimum patient management and delays in sending reports also leads to waste of resources. In hospital settings, the time between sample collection and when the test report is available to the clinician is known as Laboratory Turnaround Time (Lab TAT).

**Objective:** Objective of this study was to assess the Lab TAT in Base Hospital Elpitiya, a secondary level hospital in Southern Sri Lanka

**Methods:** A descriptive cross-sectional study was done. Three random weekdays in January 2024 were selected to represent routine hospital workload, and patients who stayed more than 24 hours were included to ensure that their investigation process could be fully captured. Date of sending the sample and receiving the sample were recorded; as exact times were not routinely documented, TAT was calculated using dates only, which is a limitation. ERC exempted as secondary data was used.

**Results:** A total number 339 BHTs were included for the analysis. Mean age of patients was 48.3 (SD 23.9) and gender balance was almost equal. The most frequent test was Full Blood Count (62.0%, n=210), of which 90.0% (n=189) were received within 48 hours. C-Reactive Protein followed (40.1%, n=136) with 85.0% (n=116) received. Serum Bilirubin results were all timely (100%, n=22). Blood Picture (50%, n=12), TSH (50%, n=10) and Urine Culture (25%, n=5) showed notable delays. Most reports were available within two days on average.

**Conclusion & Recommendations:** A variation is seen in Lab TAT between investigations and significant delays were noted for certain test types. Improving communication between wards and laboratories and reviewing staffing and workflow could help reduce turnaround time. Further studies which disaggregate Lab TAT to pre-analytical, analytical and post-analytical delays will provide better insight about the situation.

**Key words** – Laboratory Turnaround Time, Secondary Level

**PP-09 (ID 125): Perception of quality control programs among Special Grade Nursing Officers in secondary care hospitals in the Kalutara district**

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**Introduction**: The quality control programs are mediated through quality management units within the hospitals. Special Grade Nursing Officers are involved in monitoring and continuing quality control activities. However, patient and staff, including Nursing Officers, satisfaction and adherence to quality control programs are still in the process of improving.

**Objectives**: To assess the perception towards quality control programs among Special Grade Nursing Officers

**Methods**: Five semi-structured interviews were conducted among Special Grade Nursing Officers in secondary care hospitals in the Kalutara district until data saturation was reached. The interviews were recorded, transcribed verbatim, coded manually, and analyzed using thematic analysis by the principal investigator from November to December 2024, with informed written consent. The member-checking method was conducted to check the trustworthiness of the data.

**Results**: Participants highlighted that continuous, evidence-based training and better feedback systems are needed. They also emphasized respect toward patients, motivation, and better-defined roles as key to improving quality programs. The major attitudinal change needed was to think from the heart and respect patients. Reviews, system development, bottom-to-top approach, adequate staff allocations, specifying job roles, and motivation at all levels of staff need to be addressed in order to improve quality management programs.

**Conclusions & Recommendations**: Integrating quality management concepts into basic nursing training and ensuring regular motivation and system reviews are essential for sustained improvement with a bottom-to-top approach, and motivation at all levels are the main themes that need to be considered in quality improvement programs. The quality management training programs need to be included in the basic course, followed up with continuous motivation

**Keywords**: Special grade nursing officers, Quality Management, Training

**PP-10 (ID 124): Impact of Technology- Assisted onsite learning on clinical practice and patient care in the maternity unit of DGH Matale.**

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**Introduction:** Continuous professional development in maternal care is essential to improving patient outcomes. However, traditional training models often lack flexibility and real-time applicability. This initiative evaluated the impact of a technology-assisted onsite learning model on staff knowledge, confidence, and perceived clinical practice in a maternity unit.

**Objectives:** To evaluate the impact of a technology-assisted onsite smart learning initiative on staff knowledge, confidence, clinical performance, and patient satisfaction in the maternity unit at DGH Matale over a ten-months implementation period.

**Method:** A descriptive cross-sectional study was conducted among 63 maternity unit staff at DGH Matale to evaluate changes in knowledge, attitudes, and practices following a ten-month technology-assisted onsite smart learning intervention. Data were collected using a 15 item self-administered questionnaire and analyzed through descriptive statistics to identify trends, with the limitation that perception-based responses may not directly reflect clinical outcomes.

**Results:** Eighty-seven percent of respondents reported improved knowledge and confidence in applying maternity care protocols, and 81% perceived enhancements in clinical performance. While 84% expressed increased motivation and 77% found the content engaging, some suggested the need for greater scheduling flexibility. These findings reflect self-reported perceptions and do not directly measure patient outcomes.

**Conclusion & Recommendations**: The technology-assisted onsite learning model was positively received and perceived to enhance staff knowledge, motivation, and teamwork. Further evaluation using objective performance and patient outcome metrics is needed to confirm the observed benefits. To sustain the initiative's impact, expert collaboration, simulation-based learning, and CPD accreditation should continue. Implementing competency assessments and performance audits will support long-term effectiveness and guide continuous improvement.

**Key words**: Impact, technology assisted, onsite learning, clinical practice, patient care

**PP-11 (1D 150): Innovative Application of GIS Mapping for Strengthening District Level Health Services: Experience from Puttlam District**

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**Introduction:** Geographic Information System (GIS) mapping is a powerful tool for visualizing health data, identifying service gaps and guiding evidence-based decision making. It enables geospatial analysis of health trends, allowing planners to recognize inequities and prioritize interventions effectively.

**Objective:** To demonstrate the innovative use of GIS mapping for strengthening district level health services in Puttalam District.

**Methods:** A collaborative GIS initiative was conducted at the RDHS Office, Puttlam focusing on (i) distribution of government dental clinics to assess access to dental care, (ii) home deliveries in 2024 as a proxy for barriers to institutional deliveries and (iii) suicides in 2024 as indicators of mental health challenges within the Puttlam District. Dental clinic data were obtained from RDHS records. Home deliveries were geocoded using latitude and longitude from standard Family Health Bureau investigation forms. Suicide data were compiled from Police DCDB units and post-mortem registers of hospitals. All datasets were mapped using Google My Maps with cross-checking against MOH office records and field validation. Administrative boundaries of MOH areas were overlaid to interpret spatial patterns and identify clusters.

**Results:** GIS mapping revealed that Kalpitiya MOH area was the most affected with only two functional dental clinics serving a population of approximately 107,500 residents, the second highest among all MOH areas. Clusters of home deliveries were identified mainly in remote areas particularly Ettalai and Thilaliya within Kalpitiya MOH area, suggesting potential geographic or social barriers contributing to delays in accessing obstetric care facilities. Suicide cases in 2024 showed some specific hotspots, including Sirigampola, Kirimetiyana and Mallawa indicating locations that may benefit from targeted mental health interventions.

**Conclusion & Recommendations:** This study demonstrates that simple GIS tools can identify service inequities and can be scaled up for national health planning. It is recommended that district-level health staff be trained in basic GIS tools to routinely integrate mapping into planning and monitoring processes.

**Keywords:** GIS mapping, geospatial analysis, health service planning, Puttlam District

**PP 12 (ID 214): Assessment of knowledge among allied health undergraduates in state universities of Sri Lanka on artificial intelligence in future healthcare**

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**Introduction:** Emerging countries aim to achieve sustainable artificial intelligence-driven healthcare and education to address limited digital infrastructure, low digital-health literacy through an AI-revolutionized world, which underscores the importance of assessing the knowledge of prospective healthcare professionals about its potential uses.

**Objectives:** This study aimed to assess the knowledge of Allied Health Sciences (AHS) undergraduates regarding AI-based health care and exposure.

**Methods:** A cross-sectional descriptive study was conducted at four state universities in Sri Lanka through quota sampling. Five items from a previously validated international questionnaire, along with three items from another validated questionnaire, were used to assess the knowledge of AI-related healthcare. Informed permission was granted, and a face validity pilot test was conducted on thirty alumni. Ethical approval was obtained from the institutional ethical review committee. The association between socio-demographic data and knowledge was analyzed using ANOVA and an independent sampling t-test.

**Results:** The median score for overall knowledge of AI was 16, and the interquartile range (IQR) was 5 out of 25, indicating that knowledge among the AHS undergraduates was moderate. Medical laboratory students have significantly higher knowledge than nursing students (MD = 1.08878, $p = 0.038$). More than half of the participants (57.4%) either lack knowledge or are uncertain about AI entailment. A higher proportion (61.3%) has an idea of how AI can be applied in the allied health field. Notably, 394 (75%) out of 524 total sample agreed that AI should be incorporated into AHS education and training.

**Conclusion & Recommendations:** AHS undergraduates in Sri Lanka possess basic knowledge of AI, but the establishment and development of AI education in the AHS curriculum is essential for a viable AI-driven healthcare. Successful AI-based healthcare is fostered with the reformation of national digital health policy and interdisciplinary medical and technology education, which is composed of more evidence-based studies.

**Keywords:** Artificial Intelligence, Allied Health Sciences, Knowledge

## PP 13 (ID 226): Implementation of a multicomponent program to improve effective use and maintenance of medical equipment in Sri Lankan hospitals

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**Introduction:** Medical equipment (ME) maintenance retains an asset's original anticipated useful life and preserves its reliability and cost-effectiveness. This study developed and implemented a multicomponent program to improve ME use and maintenance in nine Sri Lankan hospitals from May 2020 to May 2021. A pre–post design without a control group was used due to logistical constraints.

**Objective:** To improve effective use and maintenance of selected ME in divisional hospitals in the Matara district.

**Methods:** This pre–post implementation study involved an initial baseline assessment of existing ME maintenance systems, the development and implementation of a multicomponent improvement program and a 3-month post evaluation. Five targets ME were selected for the study: oxygen regulator, electrocardiogram (ECG) machine, suction apparatus, blood pressure apparatus and mini autoclave. Ethical approval was granted by the Ethics Review Committee of the Postgraduate Institute of Medicine. A pretested questionnaire was administered to randomly selected nursing officers (n=101) and health-care assistants (n=120) to obtain baseline ME maintenance data. Six focus group discussions and 24 key informant interviews were conducted with key stakeholders to codesign the multicomponent interventions, which included: developing a standard operating procedure targeting preventive maintenance activities; establishing focal points to provide technical and logistic support; staff training; and the introduction of institutional ME maintenance documents. Program effectiveness was assessed at 3 months postimplementation using the seven predefined outcome variables.

**Results:** Baseline assessment identified no ME maintenance programs implemented in any of the hospitals. The highest availability was observed for oxygen regulator (62% to 82.3%) and ECG machine (66.1% to 84.7%). The highest functionality improvement was observed for ECG machine (40.4% to 79.7%). The positive perception of maintenance process of ME achieved the highest (33% to 80%) improvement. Following program implementation, improvements were noted in: the availability (P=0.00) and functionality (P=0.00 to P=0.02) of all selected ME; equipment maintenance processes (P=0.000); as well as staff knowledge, skills, perceptions and satisfaction.

**Conclusions:** The program improved the use and maintenance of ME and was widely supported by the key stakeholders. The approach is relevant to other resource-poor hospital settings, as inadequate ME maintenance causes health system inefficiencies.

**Key Words**: Medical equipment, Maintenance, Hospital

**PP-14 (ID 207): An Interventional Study to Reduce Hypoglycemia-Related Patient Falls in Ward 6 at the National Institute of Infectious Diseases, Sri Lanka**

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**Introduction:** Hypoglycemia contributes to 10–20% of inpatient falls globally, with fall rates of 3–5 per 1,000 patient-days. At the National Institute of Infectious Diseases (NIID), 62 adverse events were reported in 2024; patient falls were most common (n=19), and 62% were linked to hypoglycemia. Ward 6 was identified as high risk due to its large insulin-dependent population, frequent steroid-induced hyperglycemia, and complex comorbidities, highlighting the need for a focused quality-improvement intervention.

**Objective:** To reduce hypoglycemia-related falls in Ward 6 through standardized insulin-management protocols, staff training, and enhanced compliance monitoring.

**Methods:** A three-phase interventional study was conducted from January 2024 to March 2025.
**Phase 1 (Jan–Jun 2024):** Retrospective review and root-cause analysis of fall reports identified gaps in insulin timing, meal coordination, and glucose monitoring, and baseline fall rates were calculated per 1,000 patient-days.
**Phase 2 (Jul–Oct 2024):** A standardized insulin protocol and administration chart were implemented. Forty-two staff (nurses, physicians) completed training on insulin pharmacodynamics, hypoglycemia prevention, and chart use. Compliance was monitored via weekly insulin-chart audits and monthly incident-report reviews.
**Phase 3 (Nov 2024–Mar 2025):** Prospective monitoring evaluated fall rates and protocol adherence. Pre- and post-intervention fall frequencies were compared using Fisher's Exact Test.

**Results:** Twenty-nine falls occurred during the study, 18 (62%) hypoglycemia related. Ward 6 recorded 12 hypoglycemia-related falls pre-intervention (4.6 per 1,000 patient-days). Post-intervention, hypoglycemia-related falls decreased to zero (0 per 1,000 patient-days), a statistically significant reduction ($p < 0.01$). Two non-hypoglycemic sleep-related falls occurred. Protocol compliance exceeded 90% by March 2025.

**Conclusions & Recommendations: Standardizing** insulin management and strengthening staff training and monitoring effectively eliminated hypoglycemia-related falls in Ward 6, demonstrating the value of system-level interventions in improving patient safety. Scale the intervention to other high-risk wards and maintain long-term audit cycles to ensure sustainability.

**Keywords:** Patient falls, Hypoglycemia, Insulin therapy, Quality improvement, Hospital safety

**PP-15 (ID 131): Analysis of Hemoglobin Levels in the First and Third Trimesters of Pregnant women in the Kandy Municipal Council Area: A Retrospective Study**

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**Introduction**: Anemia in pregnancy persists as a major public health issue worldwide, particularly in low- and middle-income countries. It contributes to maternal and fetal complications such as low birth weight, preterm delivery, and maternal mortality. Sri Lanka has well established antenatal care programs, but anemia remains common. This study was conducted to analyze hemoglobin (Hb) levels during the first and third trimesters of pregnant women in the Kandy Municipal Council area and to identify factors associated with low Hb levels.

**Objective**: To compare Hb levels in the 1st and 3rd trimesters of pregnant women in the Kandy Municipal Council area

**Methods**: A retrospective cohort study was conducted using routine 512B antenatal records, which are standard maternal health records used in Sri Lanka. Data from 110 pregnant women who attended maternal clinics before 12 weeks of gestation and again at 28 weeks were analyzed. Demographic variables such as age, parity, and education level were assessed. Hb levels at both trimesters were compared using descriptive statistics and the Chi-square test. A p-value < 0.05 was considered significant.

**Results**: The mean hemoglobin (Hb) level decreased from 11.88 g/dL in the first trimester to 11.39 g/dL in the third trimester. Although the mean Hb level declined, the prevalence of anemia remained 10.7% in both trimesters. The decline was not statistically significant (p = 0.08). Younger mothers aged 16–20 years and primigravida mothers showed lower Hb levels compared to older mothers aged 36–40 years or multiparous mothers. Most participants (46.36%) completed Advanced Level education, and 9% had tertiary education. Mothers with higher education had mean Hb levels of 11.7 g/dL and 11.2 g/dL in the first and third trimesters, respectively.

**Conclusion & Recommendations:** Anemia continues to affect pregnant women in the Kandy area, especially among younger and primigravida mothers. Despite iron supplementation, a small decline in Hb levels was observed between the first and third trimesters. Enhancing nutrition education, promoting iron rich diets, and targeting supplementation to at risk groups are advised. Larger studies including dietary assessments are needed to guide public health interventions. Monitoring compliance with iron supplementation and dietary practices may help improve maternal outcomes.

**Keywords:** Hemoglobin, Pregnancy, Anemia, Retrospective Study

## PP -16 (ID 233) : Prevalence and factors associated with overweight and obesity among pregnant mothers in a Medical Officer of Health area in Eastern Sri Lanka

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**Introduction**: Maternal overweight and obesity are emerging public health concerns in Sri Lanka, contributing to adverse pregnancy outcomes. However, regional data, particularly from the Eastern Province, remain limited. This study aimed to assess their prevalence and associated factors among pregnant mothers in Batticaloa.

**Objective**: This study aimed to determine the prevalence and identify factors associated with overweight and obesity among pregnant women registered in the Batticaloa MOH area.

**Methods**: A community-based analytical cross-sectional study was conducted among mothers in the Batticaloa MOH area who had their pregnancy outcome in 2023. Data were collected from Antenatal Records (H 512 Part B) of all eligible mothers by a pre-intern medical officer under the supervision of the researchers. Ethical clearance was obtained from the Ethics Review Committee of Faculty of Medicine, University of Colombo. The Body Mass Index (BMI) was calculated using the weight recorded at the booking visit for women who attended their booking appointment within the first 12 weeks of gestation. Overweight and obesity were classified according to the World Health Organization (WHO) cut-off values. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) version 27. The Chi-square test was used to identify the factors associated with overweight and obesity, and a p-value of less than 0.05 was considered statistically significant.

**Results**: A total of 918 mothers were recruited, with a mean age of 29.0 years (SD = 5.4). The majority were Tamil (n = 768, 83.7%). Of the participants, 711 (77.5%) registered their pregnancy within the first 12 weeks of gestation. The prevalences of underweight, normal weight, overweight and obesity were 9.8% (n=70), 44.2% (n=314), 30.4% (n=216) and 15.6% (n=111), respectively. The combined prevalence of overweight and obesity was 45.1% (n = 273) among mothers aged 20–35 years and 60.5% (n = 46) among those older than 35 years (p = 0.004). The prevalence of overweight/obesity increased with parity, 37.8% in primigravidae, 50.4% in second pregnancies, and 55.0% in women with three or more pregnancies (p< 0.001). The associations of ethnicity, educational level, and income with overweight/obesity were not statistically significant.

**Conclusion & Recommendation**: Overweight and obesity were common among pregnant women in Batticaloa, and significantly associated with maternal age and parity, indicating a growing burden of metabolic risk in reproductive-age women. Targeted pre-pregnancy and antenatal interventions focusing on weight management, especially among older and multiparous women, are recommended.

**Keywords**: Pregnancy, overweight, obesity

**PP-17 (ID 140): Towards Early Intervention in Psychosis in Sri Lanka: Stakeholder Perspectives and CFIR Findings from TRANSLATE**

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**Introduction:** Duration of untreated psychosis (DUP) is nearly twice as long in low- and middle-income countries (LMICs) as in high-income countries, contributing to poor prognosis and substantial social and economic burdens. Early Intervention in Psychosis (EIP) services are well-established in high-income countries but remain largely absent in Sri Lanka.

**Objective:** To explore stakeholder perspectives and identify contextual factors influencing the development of culturally adapted Early Intervention in Psychosis (EIP) services in Sri Lanka.

**Methods:** Work Package 1 of the TRANSLATE project employed qualitative methods, including focus group discussions and interviews with service users, caregivers, psychiatrists, nurses, and traditional healers, as well as consensus-building workshops. Data were thematically analysed using the Consolidated Framework for Implementation Research (CFIR) to identify contextual barriers, facilitators, and priorities. The findings informed the groundwork and draft development of culturally adapted guidelines and an EIP service model for Sri Lanka.

**Results:** Key themes emerged across the CFIR domains, highlighting multiple factors influencing early psychosis care. At the **Innovation** level, participants described limited understanding of early psychosis and unfamiliarity with EIP models, with help-seeking often driven by distressing spiritual or perceptual experiences. Within the **Outer Setting**, stigma, myths, and low community awareness delayed help-seeking, while reliance on traditional healers and rural access barriers reduced service uptake. The **Inner Setting** was marked by fragmented services, limited specialist availability, and inconsistent follow-up, all of which restricted continuity of care. At the **Individual** level, service users reported social withdrawal, low confidence, and internalized stigma; caregivers faced high stress; and staff emphasized the importance of family engagement and multidisciplinary approaches. Finally, within **Implementation**, challenges included adherence difficulties, limited psychosocial support, and unclear referral pathways. Participants recommended holistic, family-inclusive, and vocationally focused interventions, supported by community education and digital platforms.

**Conclusions & Recommendations:** This study provides foundational evidence to inform the co-development of culturally adapted EIP guidelines and a draft service model for Sri Lanka. Findings highlight critical service gaps and sociocultural determinants influencing early psychosis care, underscoring the need for integrated, family-inclusive, and community-sensitive approaches. Strengthening integration between biomedical and community-based supports, improving follow-up systems, and embedding culturally sensitive, family-inclusive interventions are essential next steps toward piloting and scaling EIP services nationally.

**Keywords**: Psychosis, Early Intervention, Sri Lanka, Implementation, Mental Health

**PP-18 (ID 167): Prevalence and Factors Associated with Loneliness among Elders in the Bandaragama DS Division**

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**Introduction -** Loneliness is an emerging public health concern among elders, linked with poor mental and physical health outcomes, increased morbidity, and mortality. It arises from a combination of individual, family, community, and societal factors. Identifying these influences is vital to developing effective interventions to enhance the well-being of older adults.

**Objectives -** To determine the prevalence of loneliness and factors associated with loneliness among elders aged ≥65 years in the Bandaragama DS Division.

**Methods -** A descriptive cross-sectional study was conducted among 512 non-institutionalized elders, selected using probability proportionate-to-size cluster sampling with GN divisions as primary sampling units. Ethical approval was obtained from the Ethics Review Committee of the Postgraduate Institute of Medicine, University of Colombo. Loneliness was measured using the validated six-item De Jong Gierveld Scale; scores ≥2 indicated loneliness. Associations between loneliness and selected factors were assessed using the Chi-square test at a significance level of $p < 0.05$.

**Results -** Of the 512 participants (mean age 73.7 years, SD = 6.4), 65.9% were female. The prevalence of loneliness was 43.4% (222/512). Loneliness was significantly higher among females and elders with lower education levels, inadequate sleep (<7 hours/day), or limited productive activity (<2 hours/day). Being married, previously employed, having good neighbour relationships, using social media, having access to transportation, and having a partner were protective against loneliness.

**Conclusions & Recommendations -** Loneliness among elders in rural Sri Lanka remains high. Being married, employed, and socially connected reduced loneliness, while low education and limited activity increased risk. Community-based programs promoting social participation and digital literacy could help reduce loneliness among elders in similar rural settings.

**Keywords -** loneliness, elders, factors associated, rural area

**PP 19 (ID 203)- Anxiety and depression among patients with non-communicable diseases attending the non-communicable disease clinic at a selected hospital**

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**Introduction**: Non-Communicable Diseases (NCDs) are chronic, non-transmissible conditions that represent a major global health challenge, contributing significantly to morbidity, mortality, and economic burden. Emerging evidence indicates that NCDs are closely linked with mental health problems such as anxiety and depression.

**Objective**: To assess anxiety and depression among patients with non-communicable diseases attending the non-communicable diseases clinic at a selected hospital.

**Methods**: A descriptive cross-sectional study was conducted among 273 patients selected by simple random sampling. Data were collected using a pre-tested, interviewer-administered questionnaire incorporating the General Anxiety Disorder (GAD-7) and Patient Health Questionnaire (PHQ-9) scales and analyzed using SPSS version 25. Ethical clearance was obtained.

**Results**: Majority were male 54.2% (n=148), Sinhalese 82.8% (n=226), Buddhists 80.2% (n=219), married 86.1% (n=235) and unemployed 46.5% (n=127). Diabetic mellitus 57.5% (n=157), hypertension 44.7% (n=122) heart diseases 30% (n=82) and renal diseases 24.5% (n=67) were common in this population. The majority had minimal anxiety 56.4% (n=154) and 23.1% (n=63) had mild anxiety, 14.3 % (n=39) had moderate anxiety and 6.2 % (n=17) had severe anxiety according to the score. The majority had a minimal depression level 50.2% (n=137) and 11.7% (n=32) had mild depression, 20.5 % (n=56) had moderate depression, 13.9 % (n=38) had moderately severe depression and 3.7% (n=10) had severe depression according to the score.

**Conclusion & Recommendations**: While most patients with NCDs reported minimal anxiety and depression, a notable proportion exhibited moderate to severe symptoms, highlighting the need for integrated psychological support within NCD management. Strengthening psychosocial counseling, peer-support programs, and routine mental health screening at NCD clinics is recommended to improve patients' overall wellbeing.

**Keywords**: Anxiety, Depression, NCD, Patients

**PP-20 (ID 201): The Relationship Between Stress, Psychological Resilience and Coping Strategies Among Undergraduate Nursing Students in University of Peradeniya**

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**Introduction:** Nursing students are a high-risk group for stress due to clinical workload, shift schedules, and emotional demands that often challenge their mental health and learning outcomes. Psychological resilience and coping strategies are key in managing stress and promoting well-being. Therefore, assessing the relationship between these factors is vital for developing interventions to support students' well-being.

**Objective:** To assess the relationship between stress, psychological resilience, and coping strategies among nursing students at the University of Peradeniya.

**Method:** A descriptive cross-sectional study was conducted among 116 simple-randomly selected undergraduate nursing students using standardized, self-administered instruments: the Perceived Stress Scale (PSS-10), Connor–Davidson Resilience Scale (CD-RISC), and Brief COPE Inventory. Data were analyzed using descriptive statistics and Spearman's correlation ($p < 0.05$). Ethical clearance was obtained from the Ethics Review Committee, Faculty of Allied Health Sciences, University of Peradeniya (ERC No. AHS/ERC/2024/164, Date: 20.11.2024).

**Results:** The majority of participants were female (76.7%) with an age range of 20–24 years. Most students (87%) reported moderate stress, particularly among third-year students (19%) and those with underlying conditions (14.7%). Moderate resilience was observed in 62.1%, while 19% showed low resilience. Adaptive coping strategies, such as acceptance and emotional or spiritual support, were more common than avoidance. Resilience correlated positively with adaptive coping ($\rho = 0.27$, $p = 0.004$) and negatively with stress ($\rho = -0.34$, $p < 0.001$), whereas coping frequency showed no significant association with stress ($p = 0.587$).

**Conclusion and Recommendations**: Nursing students experience moderate stress, with resilience serving as a key protective factor. Integrating resilience-building and stress management programs into the nursing curriculum, alongside regular mental health screening and mentoring, could help identify vulnerable students early and promote psychological well-being.

**Keywords:** Nursing Students, Stress, Psychological Resilience, Coping Strategies

**PP-21 (ID 236): Evaluation of The Role of Traditional Cultural Media (Street Drama) As A Health Education Tool for Non-Communicable Disease Prevention.**

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**Introduction:** Non-Communicable Diseases (NCDs) are a leading cause of morbidity and mortality in Sri Lanka. Enhancing community awareness is essential for promoting healthy lifestyles and reducing the long-term healthcare burden (Ministry of Health, 2021). To address this issue, the Ayurveda Community Health Promotion Services (ACHPS) Media and Cultural Unit organized street drama awareness sessions under the direct supervision of Indigenous Sector in Ministry of Health and Mass media. School children, parents, and broader community members were target populations.

**Objective:** The objective was to assess the level of community satisfaction with traditional cultural media of street drama sessions as a tool for health education in the prevention of NCDs in Sri Lanka.

**Methods:** A standardized script, developed collaboratively by a panel of BAMS graduate doctors and a professional scriptwriter. Community Health Development Officers(CHDOs) from ACHPS participated as performers, under the guidance of a qualified stage drama trainer. A total of 22 street drama sessions on NCD awareness through Ayurveda were conducted in the Anuradhapura District over six months from June 2024, after obtaining the relevant permissions. A random sampling technique was applied to select the sessions. A color-coded card system (green for satisfaction, orange for neutral, and red for dissatisfaction) was used to assess participants' perceptions. Before the distribution of color-coded cards, the study was explained as a part of drama and consent was obtained verbally and asked to collect card. The cards included NCD awareness messages and a traditional "*Thambum Hodda"* recipe, serving as an indirect tool for learning.

**Results:** The reported sample size was n=2,106. Satisfaction levels were evaluated using a color card system, with the findings showing that 80.57% (n = 1,679) were satisfied, 19.6% (n = 413) were neutral, and 0.4% (n = 9) were unsatisfied.

**Conclusion & Recommendations**: The results indicate strong participant involvement in knowledge enhancement, with more than 80% of attendees reporting satisfaction, concluding its usefulness for community health education. Street drama should be expanded and integrated into national health promotion strategies as a useful, community-based tool for NCD prevention.

**Keywords:** NCD, Street drama

**PP-22 (ID 163): Knowledge and Attitude Regarding Increased Screen Hours and Effects on Eye Among Patients Aged 20–30 Years Attending the Outpatient Department at National Hospital of Sri Lanka**.

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**Introduction:** Digital screen use has increased globally, raising concerns about ophthalmic health, particularly among vicenarians. However, awareness regarding screen-related eye conditions and preventive practices remains underexplored in this group.

**Objective:** This study aimed to assess knowledge and attitude regarding the effects of increased screen time on eye, including symptom prevalence and associated factors, among patients aged 20-30 years attending the outpatient department at the national hospital of Sri Lanka.

**Methods:** A descriptive cross-sectional study was conducted among 320 participants selected through nonprobability sampling. Data were collected using a self-administered questionnaire comprising both quantitative and qualitative components. Qualitative data were analyzed using SPSS version 25.0 with descriptive statistics, chi square tests, and spearman's correlation, while thematic analysis was used for qualitative data. Ethical approval was obtained from the ethical review committee of faculty of medicine, General Sir John Kotelawala Defense University (RP/S/2024/38) and national hospital of Sri Lanka (AAJ/ETH/COM/2024).

**Results:** Among respondents, 61.3% were aged 21-25 years and 90.1% were female. Overall, 96.3% were aware of screen related eye effects and 90.3% knew preventive measures. Gender (p=0.005) and screen illumination (p= 0.05) were significantly associated with ophthalmic symptoms, while a strong positive correlation existed between symptom frequency and severity (r=0.643, p<0.01), and a week positive correlation between symptom frequency and attitude (r=0.135). Although awareness was high, attitude towards behavioral changes was moderate, many expressed concern but struggled to limit screen use. Thematic findings revealed dependence on screen for work, education and social connection, and highlighted both personal and public strategies for prevention.

**Conclusion:** Enhancing regular eye checkups, promoting 20-20-20 rule and expand further research are recommended to reduce ophthalmic discomfort among Sri Lankan vicenarians.

**Keywords:** Awareness, Attitude, Screen hours, Ophthalmic health, Vicenarians

**PP-23 (ID 136): Perception of Overweight Among Women in a Selected Medical Officer of Health Area in the Kalutara District**

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**Introduction**: Limited evidence exists on how Sri Lankan women perceive overweight and obesity and the sociocultural factors that shape these perceptions.

**Objective**: To explore perceptions of overweight and obesity among overweight/obese women and their immediate family members in the Kalutara District.

**Methods**: A qualitative study was conducted in the Medical Officer of Health area –Panadura, Kalutara district, Sri Lanka. Participants were selected using purposive sampling to ensure representation from women with varying BMI categories and family structures. Data were collected through semi-structured, in-depth interviews. A total of 17 In-depth interviews were conducted, nine with overweight/obese women, five with spouses, and three with mothers until thematic saturation was achieved. Interviews were transcribed verbatim and analyzed using manual content analysis by two researchers, and consensus was reached on emerging themes following triangulation. Ethical clearance was obtained from the Ethics Review Committee of the University of Kelaniya.

**Results**: Three key themes emerged: (1) Sociocultural acceptance of body size, where overweight was often viewed as a sign of health and prosperity; (2) Perceived personal control and motivation, with most women recognizing overweight but lacking motivation to change due to competing priorities; and (3) Environmental constraints, such as limited community support and social norms discouraging active lifestyles.

**Conclusion**: Women's perceptions of being overweight are shaped by sociocultural norms, family attitudes, and limited awareness of health risks. Interventions addressing overweight should consider family engagement and sociocultural context in community health programs.

**Keywords**: Overweight, obesity, women, perception

## PP-24 (ID 211): Non-Randomized Interventional Study on the 5A Smoking Cessation Method at Eastern Naval Area (ENA) in 2021/22: A Public Health Approach to Resilience in the Crisis Period

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Non-communicable diseases (NCDs) remain the leading cause of global morbidity and mortality, with tobacco use recognized as a major modifiable risk factor contributing to premature cardiovascular deaths. The projected increase in NCDs associated with long COVID-19 underscores the urgency for effective smoking cessation strategies. The 5A's method, Ask, Advise, Assess, Assist, and Arrange, recommended by the US Public Health Clinical Practice Guidelines, is an evidence-based behavioral approach to promote smoking cessation.

This non-randomized purposive interventional study was conducted among sailors exhibiting unhealthy smoking behaviors in the Eastern Naval Area (ENA) between March and October 2022. A total of 147 participants were enrolled, of whom 87% (n=128) presented with NCD or pre-NCD conditions such as impaired glucose tolerance (IGT), blood glucose >100 mg/dL, elevated body mass index (BMI), or low-density lipoprotein cholesterol (LDL-C) >116 mg/dL. The age distribution comprised 19.8% (n=30) aged 20–29 years, 66.6% (n=105) aged 30–39 years, and 13.2% (n=12) aged 40–49 years. Only 17% (n=28) had advanced-level education, while 83% (n=120) were junior sailors.

Participants received a behavior change communication intervention using the 5A's method, facilitated by naval nurses, counseling officers, and public health inspectors, with a six-month follow-up. Within three months of intervention, 72.34% (n=107/147) either quit smoking or reduced consumption by 39.8%. The paired t-test showed a highly significant reduction in smoking consumption ($T=2.88 \times 10^{16}$, $p<0.05$), confirming the effectiveness of the intervention.

This study demonstrates that the 5A's method offers a low-cost and effective approach for smoking cessation, particularly relevant in the post-COVID-19 era to mitigate the rising burden of long COVID-related NCDs. Demographic factors such as age, education level, and rank may influence cessation outcomes.

**Keywords:** NCD, 5A method, smoking cessation, resilience, COVID-19

## PP-25 (ID 247): Epidemiology of Deaths due to Drowning in Kithulgala North and South Grama Niladari Division Kegalle District

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**Introduction:** Drowning represents a major yet preventable public health challenge in Sri Lanka, with approximately 1,000 fatalities annually, disproportionately affecting males and children. The Kelani River, flowing through Kithulgala in Kegalle District, serves as both an economic resource and a significant drowning hazard due to environmental risks and human activities. This study examines drowning deaths in Kithulgala North and South Grama Niladari Divisions (2019-2023) to identify risk factors and prevention opportunities. Main related factors include alcohol consumption and negligence of warnings.

**Objective:** To describe the demographic and situational factors associated with drowning deaths in Kitulgala North and South (2019–2023)

**Methods:** Using a mixed-methods approach, Research was conducted with structured interviews with contacts of drowning victims and key informant interviews with stakeholders including medical officers, police, and local government officials. Sampling was not required as whole population was studied. Deaths caused by drowning were identified with the registries at coroner's office, JMO office and police records. Ethical clearance was obtained from PGIM (ERC/PGIM/2023/159 dated 01.10.2024). Both quantitative and Qualitative analysis method were applied.

**Results:** Average age of drowning death is 32.5 years. Total 12 deaths were analyzed. Nine deaths out of 12 were due to alcohol consumption while two deaths were due to accidental fall. Nearly 90% of deaths occurred during the SRIPADA season.

**Conclusion & Recommendations:** Drowning in the Kelani Ganga is driven by a combination of environmental dangers, risky human behaviors, and insufficient preventive infrastructure. A majority of deaths were related to alcohol and negligence. High-risk zones in Kitulgala area ferry points pose significant dangers to both residents and visitors, especially during the Siripada pilgrimage. Deploying Lifeguards, Community-Based Risk Mapping, Education Programs, Behavioral Campaigns, Improved Signage Install multilingual, high-visibility warning signs at dangerous spots.), Rescue personal Training, Regulate Water Activities, Media Engagement, Mental Health Support and Research and Surveillance can be recommended.

**Key Words**: Drowning, Kithulgala, Alcohol, Rescue

**PP-26 (ID 176): Association between visceral fat percentage and sleep quality of obese adults attending the Non-Communicable Disease (NCD) clinic of Panadura Base Hospital, Sri Lanka**

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**Introduction:** Visceral fat, a key indicator of central obesity, is increasingly recognized for its association with poor sleep quality; however, this relationship remains insufficiently studied in clinical populations.

**Objectives:** This study aimed to assess the association between visceral fat percentage (VFP) and sleep quality among obese adults attending a selected clinic.

**Methods:** An institutional-based descriptive cross-sectional study was conducted among obese adults (n=160) selected by convenience sampling. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), and VFP was measured using the body composition analyzer (ACCUNIQ BC380, Selvas Health Care, South Korea). PSQI > 5 was categorized as poor sleep quality. VFP was categorized as normal (1–9), high (10–14), and very high (15–30). Data were analyzed using SPSS version 25.0, with *p<0.05* considered statistically significant. Ethical Clearance was obtained from the Ethics Review committee, Faculty of Medicine, General Sir John Kotelawala Defence University (ERC: RP/S/2024/57).

**Results:** Majority (82.50%, n=132) were females with a mean ±SD of age of 45.78 years ±10.41. Their mean ±SD waist-to-hip ratio was 0.97 ±0.08 with males having a significantly higher ratio than that of females (1.02 ±0.10 vs 0.96 ± 0.72, *p<0.05*). Mean ±SD of VFL was 13.54 ±2.23 with females having a higher VFL than that of males (13.67 ±2.26 vs 12.93 ±2.53, *p>0.05*). Further, 63.8% (n=102) had high, another 33.1% (n=53) had very high and remainder (3.1%, n=5) had normal VFL. Poor sleep quality was present among 64.37% (n=103). Among them, 56.3% (n=58) had high VFP and another 41.7% (n=43) had very high VFP. VFP showed weak positive correlations with sleep disturbance score (r=0.189, *p<0.05*) and PSQI score (r= 0.183, *p<0.05*).

**Conclusion & Recommendations:** Despite the limitation of convenient sampling, this study concludes that the poor sleep quality observed among obese adults was significantly associated with VFL with those having high VFL showing more sleep disturbances contributing to poor quality sleep. These findings emphasize the need for integrated interventions to improve sleep hygiene as a part of obesity management. Further, longitudinal and interventional studies are warranted to elucidate causal relationships between sleep quality and VFL

**Keywords:** Obesity, Sleep quality, Sleep deprivation, Sleep hygiene

**PP-27 (ID 181): Prevalence of Diabetic Mellitus and Hypertension and associated factors and cardio-vascular disease risk among Healthy Lifestyle Center participants in hospitals of Regional Directorate of Health Services, Kalmunai-A secondary data analysis**

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**Introduction:** There are many of Non -Communicable Disease (NCD) which contributes to the majority (84%) of deaths including premature deaths. Diabetic Mellitus and Hypertension are common and increasing in trend and becoming a major public health concern in Sri Lanka. Healthy Lifestyle Center (HLC) are placed in the government hospitals to screen NCD over 35 years people.

**Objectives**: To determine the prevalence of Diabetic Mellitus and Hypertension, describe associated factors of Non-Communicable Disease and assess the cardiovascular risk among Healthy Lifestyle Center participants in the hospitals of Regional Directorate of Health Services, Kalmunai.

**Methods:** Healthy Lifestyle Center (HLC) based descriptive cross-sectional study with an analytical component in the secondary data of 19,860 HLC participants from seven Base hospitals, fourteen Divisional hospitals, and ten primary medical care units in the Kalmunai RDHS for the year 2024. Ethical approval not required as anonymized secondary data were used

**Results:** The HLC coverage was 10% and the males to females ratio was 1: 1.4 in the RDHS Kalmunai. The prevalence of diabetes mellitus was 18.15% and the hypertension was 18.36% among the HLC participants. The overweight was 34.4 % and the obesity was 15.12 % and physical inactivity was 41.92%. The prevalence of smoking was 6.6% and the alcohol consumption 6.11%, while the betel chewing was 16.97%. The Cardio-Vascular-Disease risk was 8.62% among the HLC participants**.**

**Conclusions & Recommendation:** The underutilization of HLC and low male participation are the main challenges leading to underreported NCD prevalence and its risk factors. The prevalence among apparently healthy individuals suggests the true burden is much higher than current data indicates. A gender-specific pattern is also noted in different risk factors compared to the national statistics. Develop programs with multisectoral approaches and community engagement to improve the utilization of HLC services and strengthen NCD screening. The gender, risk factor and region specific, targeted interventions should be applied with health promotion strategies.

**Keywords:** Non-communicable Diseases, Risk factors, Healthy Lifestyle Center

**PP-28 (ID 190): The Perceptions and the Practices on Diabetic Prevention among the Diabetic Patients Attending to the Government Hospitals Clinics in the Colombo District.**

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**Introduction:** Sri Lanka has a higher diabetic endemicity, and the Colombo district has a higher rate of diabetes. However, very few studies have looked at patient's perception and prevention practices. Behaviour change interventions, based on the perceptions and practices of the patients are more effective for the prevention and control of diabetes.

**Objective:** To assess the perceptions and practices on diabetes prevention among the diabetic patients attending the government hospital clinics in the Colombo district.

**Method:** Hospital-based cross-sectional study was conducted in the eleven hospitals, on a sample of 370 patients, selected through the random number generation method. A face and content-validated, self-administered questionnaire with the Likert scale was used to collect the data, and reliability was ensured with the Cronbach's Alpha test (0.84). Descriptive statistics and the chi-square were done. Ethical approval was taken from Colombo (EC-24-135).

**Results :** The percentages of female and male participants were 54.4% (n=201) and 45.7% (n=169), respectively, and the mean age was 55.92±0.9. Their perception of risk factors was as follows: Most of the participants (44.3%) perceived unhealthy food as a key risk factor, while 27% mentioned obesity and 24.3% family history. Considering their practices, almost all participants (96.7%) took their medication regularly, but 11.3% engaged in regular exercise. Involving exercise was not associated with sex ($p= 0.236$, chi-square 0.686), and it was significantly high among the age group between 40 to 60 years ($p=0.000$, chi-square 100.97). The participants who had the risk of complications were 49.2% (n=182). Yoga was recognized as a mentally relaxing practice, not as an exercise, by the participants (78.2%).

**Conclusion & Recommendation:** The participants perceived that unhealthy diets are risk factor for diabetes. However, the perceptions and practices of exercise were poor. Many participants remain at risk of complications. Hospital-based exercise sessions should be initiated or strengthened, particularly for diabetic patients.

**Key words**:  Diabetes, Perception and practices

## PP-29 (ID 194): Impact of Social Media on Dietary Habits among Undergraduate of University of Peradeniya

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**Introduction**: According to the social media usage statistics on 2024, the number of people using social media is over 5.07 billion worldwide. Sri Lanka had approximately 7.5million social media users, representing 34.2.% of the total population. Social media content can affect people in two ways, positively and negatively. Social media can be an easy and low-cost method for nutritional information. Unhealthy foods have gained popularity in Sri Lanka. Especially among the youth and people with busy lifestyles. University students can be considered as a high-risk group. Lots of research is done on social media's influence on people's lives. However, the understanding of its specific impact on the dietary habits of university students is limited. This study aims to fill this gap by exploring how social media affects food choices, dietary habits, peer influences, and nutritional awareness of the undergraduates.

**Objectives**: To assess the impact of social media on the dietary habits of undergraduates at the University of Peradeniya.

**Method:** This study was a descriptive, cross-sectional, quantitative study conducted among 388 undergraduates of university of Peradeniya. Sample size was calculated using Yamane's formula. Social media plays a role in providing nutrition related content Data was collected using a pre-tested, self-administered questionnaire which was designed based on extensive literature search. The collected data were analyzed using descriptive analyses and Pearson correlations using SPSS version 25.$P < 0.05$ was considered as the significant level. Dietary habits questionnaire was applied to assess dietary habits and Pearson correlation was applied to find correlation between social media and dietary habits. Ethical approval was obtained from the Ethics Review Committee, FAHS, UOP.

**Results-** A total of 34.8% of the participants were male, while 65.2% were female. Of the 388 participants, (64.7%) resided in university hostel. The Majority of undergraduates (63.2%) were within the normal BMI range (18.5-24.9) according to the WHO BMI classification. The study found that social media significantly influences the dietary habits of undergraduates, with platforms like YouTube (86.9%) and Facebook (74.7%) being the most commonly used for accessing food-related content. This study find Weak negative correlation between social media usage and eating habits ($r = -0.107$, $p = 0.035$) .The study revealed a positive relationship between the frequency of seeing peers share food-related content ($r=0.410$) ($p<0.01$) and the motivation to try new foods.

**Conclusion & Recommendation**: Frequent exposure to food-related social media content, especially on highly visual platforms such as YouTube and Facebook, appears to shape undergraduates' dietary behaviors by promoting curiosity and openness to new foods, though potentially at the expense of consistent healthy eating patterns. Future studies should emphasize larger, multi-institutional studies and inclusion of nutritional outcome measures.

**Keywords**- social media, Dietary habits, Undergraduates

## PP-29 A (ID 123): Determining intention, fast food consumption and their related factors among university students in Faculty Allied Health Sciences, University of Peradeniya by using a Theory of Planned Behavior

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**Introduction:** With the development of science and technology, the people's lifestyle also changes, especially the food pattern of the people change from traditional pattern to fast food pattern. As the result of huge use of fast foods, the people have to face lot of noncommunicable diseases like type 2 diabetes mellitus and hypertension. The Theory of Planned behavior explains that a patient's behavior is influenced by their attitude, social norms and perceived control over that behavior.

**Objective:** Identify factors influencing intent to use of fast food and norms, beliefs, and behavior of fast-food intake among undergraduate students in the Faculty of Allied Health Sciences, University of Peradeniya using a Theory of Planned Behavior (TPB).

**Methods:** A descriptive cross-sectional study was conducted among 264 students of the Faculty of Allied Health Sciences, University of Peradeniya, with ethical approval obtained from the Faculty Ethics Review Committee (AHS/ERC/2024/107). The study sample selected by using stratified random sampling method. An online self-administrated questionnaire with four sections used to collect data. The study data analyzed in SPSS software version 26.0 using descriptive statistics (frequency, Means and Standard Deviation) and inferential statistics (chi-square, t-test, correlation and multiple regression).

**Results:** A total of 264 participants were completed the questionnaire (73 males and 191 females). There were significant variations in fast food consumption association with gender. Among the TPB variables, Subjective norm and perceived behavioral control were significant predictors of fast-food consumption intention ($p < 0.01$). TPB has significantly predicted fast food consumption behavior with a variance of $R^2 = 0.18$.

**Conclusion & Recommendations:** Findings show that students' attitudes and social influences play a key role in fast food consumption. The actual behavior is supposed to be health educators to design appropriate interventions to improve nutritional status of students. These findings are helpful for developing targeted interventional health strategies and guide university health programs in developing educational and behavioral change campaigns.

**Keywords:** Fast food, University students, Theory of Planned Behavior

## PP-30 (ID 224): Quality of Nursing Work Life and its Associated Factors among Female Nurses in Acute Care Setting at Teaching Hospital Anuradhapura

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**Introduction:** Nurses as the largest group of health care providers should enjoy a satisfactory quality of working life to be able to provide quality care to their patients. Therefore, attention should be paid to the nurses' working life.

**Objective:** This study aimed to assess the quality of nursing work life and its associated factors among female nurses in acute care setting at Teaching Hospital Anuradhapura.

**Methodology:** This cross-sectional descriptive study was conducted with 264 nurses at Teaching Hospital, Anuradhapura using pretested Brooks' Quality of Nursing Work Life (QNWL). Questionnaire. The tool was translated to Sinhala and pretested for cultural relevance and internal consistency before use. Data were analyzed using descriptive statistics, Pearson's correlation and Chi-squire test where applicable. Ethical approval was obtained from Rajarata University of Sri Lanka.

**Results:** Out of 280 nurses invited, 264 responded (response rate 94.3%). The results of the study showed that 90% of nurses reported that they had moderate level of quality of work life while 9.8% and 0.4% had undesirable and good quality of working life, respectively. Nurses had mean values for the components of work life and home life, work design, work context and work world that were all slightly below the expected middle values. The highest satisfaction was found in the work context, and the lowest satisfaction was in the work life-home life balance, highlighting the difficulties nurses face in managing both work and personal life. As per correlation of the QNWL ,there is a moderate positive significance related to supervisory support (r = 0.488,p =0.000), followed by weak positive significance with other disciplinary support (r =0.296, p=0.000) and work environment (r=0.285,p=0.000). There was not a statistically significant association between the QNWL and all of the sociodemographic variables in the current study.

**Conclusions and Recommendation:** Nurses' quality of work life was at the moderate level. Supervisory and other disciplinary support and work environment are the factors affecting for quality of work life. As quality of work life has an important impact on attracting and retaining employees, it is necessary to pay more attention to the nurses' quality of work life and its affecting factors

**Key words**: Quality, work life, associated factors, Nurses

**PP-31 (237): Assessment of Stress Levels Among Government Employees in Anuradhapura District.**

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**Introduction:** Stress is a significant public health issue, affecting physical and mental well-being of employees in all sectors. Limited data exists on its prevalence among Sri Lanka's public sector workers. Assessing stress levels among government employees, help to understand their prevalence for designing effective interventions and promoting workplace health and productivity.

**Objectives:** The main objective of this study was to determine the level of perceived stress among the government employees in Anuradhapura district.

**Methods**: A cross-sectional survey was conducted in the Anuradhapura District over a period of six months, beginning in June 2024, after obtaining written informed consent from participants. All permanent government officers aged over 20 years who had been employed for more than six months were eligible for inclusion. Employees from all 22 Divisional Secretariat offices in the district were considered the study population. Assuming a non-response rate of 20%, the minimal sample size was 960. The list of eligible officers was categorized according to occupational category and selected randomly, at least representing 1/4 of each category. Basic demographics, including age, gender, and occupational category, were assessed. Participants themselves completed the PSS-10 questionnaire, which measures perceived stress over the previous month. Scores were categorized into low (0–13), moderate (14–26), and high (27–40) stress levels.

**Results:** A total of 1333 officers participated, representing 28.7% male and 71.3% female. The median age of participants was 46.10 years. Among those surveyed, executive officers represented 2.7% (n=36), management assistants 43.9% (n=586), field officers 31.2% (n=416), and other staff 13.5% (n=181). Results showed that 25.1% of participants had low stress, while 69.1% moderate and 6% had high stress.

**Conclusion & Recommendation:** The results indicate that 75.1% (3/4) of government employees are experiencing moderate to high levels of stress. It is recommended to implement workplace stress management programs to promote employee well-being.

**Keywords:** Perceived stress

**PP-32 (ID 142): Analysis of Musculoskeletal Pain Distribution Among Chefs in Five-Star Hotels in Colombo District, Sri Lanka: A Descriptive Cross-Sectional Study Using the Cornell Musculoskeletal Discomfort Questionnaire (CMDQ)**

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**Introduction:** Work-related musculoskeletal disorders (WMSDs) are common in physically demanding jobs like culinary work, leading to pain and disability. Understanding discomfort patterns can guide ergonomic interventions.

**Objective:** To evaluate the distribution and severity of musculoskeletal discomfort among chefs in Colombo's five-star hotels using the CMDQ, and to examine its association with demographic and work-related factors.

**Methods:** This descriptive cross-sectional study utilized systematic random sampling to select participants. Ethical approval for this study was obtained from the Ethics Review Committee, General Sir John Kotelawala Defence University. A total of 100 chefs representing four five-star hotels participated (100 out of 120 chefs; response rate = 83%). Participants were selected based on the total number of chefs in each hotel, 25 chefs per hotel. Data on musculoskeletal symptoms were gathered using the CMDQ, focusing on frequency, severity, and work interference over the preceding week. Statistical processing and interpretation were carried out with SPSS 25.0. Discomfort scores were calculated as: (1 × % Mild) + (2 × % Moderate) + (3 × % Severe), integrating intensity and prevalence. Associations between discomfort and demographic/work-related factors were analyzed using Pearson correlation and Chi-square tests.

**Results:** Musculoskeletal discomfort was reported by 94% (n=94) of chefs. Highest discomfort scores were found in the neck (161), left forearm (154), right shoulder (151), left shoulder (128), and left knee (126). Moderate scores appeared in the right lower leg (120), right knee (118), and lower back (107). Lowest scores were in the left thigh (104) and hip/buttock (103). The neck was affected in 55% (n=55), right shoulder in 54% (n=54), and lower back in 47% (n=47) of participants. Lower back discomfort increased with advancing age (r=0.310, p=0.002) and longer work experience (r=0.345, p=0.001). BMI was significantly associated with forearm (p=0.022) and hip discomfort (p=0.009).

**Conclusions & Recommendations:** High prevalence of musculoskeletal discomfort exists among chefs, particularly in the neck, shoulders, and lower back regions. These discomforts appear to be influenced by both occupational and personal factors. Ergonomic training, job rotation, and adequate rest breaks are recommended to reduce musculoskeletal strain and prevent chronic disorders among chefs.

**Keywords:** Musculoskeletal discomfort, Cornell Musculoskeletal Discomfort Questionnaire (CMDQ), chefs, ergonomics, occupational health

**PP-33 (ID 145): Assessing the quality of life and safety practices of quarry workers in four selected quarry sites in Kalutara and Colombo districts**

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**Introduction**: The quarry industry in Sri Lanka is associated with hazardous working conditions, resulting in significant occupational health risks and poor safety practices that impact the quality of life (QoL) of workers. Despite these concerns, limited research exists on quarry workers' QoL and safety practices in the local context.

**Objective**: To assess the quality of life, safety practices, and occupational health concerns among quarry workers in Colombo and Kaluthara districts.

**Methods:** A descriptive cross-sectional study was conducted among 60 adult quarry workers from four quarry sites selected through convenience sampling, which may limit generalisability. Data were collected using an interviewer-administered questionnaire that included the WHOQOL-BREF scale, lifestyle-related questions, and items on safety practices. An observation checklist was used to assess on-site safety conditions and PPE usage. Responses to open-ended questions underwent content analysis, revealing key themes such as lack of formal safety awareness, long working hours, job-related stress, and substance use as a coping mechanism. Quantitative data were analyzed using SPSS. Ethics Review Committee, General Sir John Kotelawala Defense University.

**Results:** 60 participants were male; 70% were married (n=42), and 60% (n=36) had secondary education. A (83.3%; n=50) had 9–12 years of work experience. Quality of Life**:** 73% (n=44) reported moderate QoL; 27% (n=16) reported high QoL. Hazard Exposure**:** Nearly all workers were exposed to dust, noise, and physically strenuous tasks. Safety Practices**:** PPE usage was extremely low, only 1.67% (n=1) reported "always" using PPE, while 33.83% (n=20) reported "never" using PPE. Work-related injuries**:** 60% (n=36) reported injuries such as slips/falls, machinery accidents (40%; n=24), and chemical-related incidents (37.3%; n=22). Training**:** None of the participants received formal occupational safety training. Qualitative findings highlight stress, pain, limited safety awareness, and substance use as major concerns affecting well-being.

**Conclusion & Recommendations:** Quarry workers operate in hazardous environments with poor adherence to safety practices and minimal protective measures. Despite reporting moderate QoL, workers face significant occupational risks, physical strain, and job-related stress. As this study was limited to four sites and a relatively small sample, further research with larger and more diverse quarry populations is recommended. Strengthen intersectoral collaboration between the Ministry of Labour, Ministry of Health, Public Health Inspectors, and quarry site owners to provide mandatory safety training and hazard awareness programmes, ensure availability and enforcement of PPE usage, implement regular workplace monitoring and safety audits, establish policies to improve workers' health, well-being, and overall QoL

**PP-34 (ID 225): Low-cost, context-specific occupational health interventions for clinical dental staff in resource-poor settings**

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**Introduction:** Clinical Dental Staff (CDS) are vulnerable to Occupational Health and Safety (OHS) risks, particularly in resource-constrained Low and Middle-Income Countries (LMICs). There is limited contextually relevant research available to guide the stakeholders in LMICs to manage OHS risks.

**Objective:** To strengthen the evidence base, a co-designed, multi-component OHS program for CDS was piloted at the Institute of Oral Health (IOH) in Sri Lanka.

**Methods:** Mixed-method, pre-post study was conducted in three phases between June 2020 and July 2021 at the IOH, Sri Lanka Phase I comprised a baseline assessment to identify OHS gaps, using a questionnaire, focus groups, interviews and observational checklists, involving Dental Surgeons (n=46), Nursing Officers (n=16) and Health Care Assistants (n=78). Phase II involved the development and implementation of targeted interventions, which were developed with the consensus of project participants. Phase III evaluated post-implementation impact after three months. . Ethical approval was obtained from the Ethics Review Committee of the Post Graduate Institute of Medicine, Sri Lanka.

**Results:** Initial assessment revealed several challenges, including a lack of OHS-related staff awareness and training, inadequate reporting mechanisms and insufficient institutional guidelines. The interventions implemented included: OHS guideline creation, OHS training programs, knowledge sharing workshops, the establishment of an OHS management focal point, introduction of reporting mechanisms, welfare facility improvements, staff Hepatitis B vaccination and psychosocial support programs. The Phase III findings demonstrated significant improvements in staff knowledge, attitudes, practices and satisfaction with selected OHS measures. However, CDS satisfaction with welfare facilities and psychosocial support did not significantly improve.

**Conclusions:** This study revealed that focused and co-designed OHS interventions effectively enhance the knowledge, attitudes, practices and satisfaction of CDS. CDS reported post-implementation reduction in OHS incidents and complaints. The study highlighted the importance of stakeholder engagement and the use of co-designed multiple interventions in improving OHS in resource-constrained settings.

**Key words**: Occupational health, Occupational safety, Hospital dental staff, Sri Lanka

**PP-35 (ID 169): Preliminary evaluation of deep learning models for automated identification of *Aedes* and *Anopheles* mosquitoes with limited samples in Sri Lanka.**

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**Background:** Dengue, Chikungunya and Malaria are important public health diseases in Sri Lanka. Correct identification of vectors of these three vector-borne diseases is essential to initiate accurate vector control strategies to control the potential transmissions. The limited number of trained staff in the country is a barrier to identifying many sampled mosquitoes.

**Objective:** The study aims to investigate the potential of utilizing various deep learning models (ResNet50, Swin Transformer, and Vision Transformer) for the automated identification of mosquito vectors as a solution to this problem.

**Method:** Entomology surveys were conducted in Western and Uva provinces. *Aedes* eggs collected via ovitraps were reared to adults (N=25), while *Anopheles* adults(N=20) were collected using cattle-baited traps. Images of these mosquitoes were taken using Motic SMZ171-TLED dissecting image microscope fixed with 0.4X C-mount camera adapter. Images of the Entire mosquito (25,20) and images of its dissected Head(6,5) , Wing(6,4), Hind leg(6,4) and Abdomen(8,4) were taken (respectively for *Aedes*, *Anopheles*) using the same microscope and image augmentation was applied to increase the dataset size for each class to 100. The train, test, and validation splitting were done for image dataset with a ratio of 60%(N=60), 20%(N=20), and 20%(N=20), respectively. Resnet50, Swin Transformer(SwinT) and Vision Transformer(ViT) models were used as base models for feature extraction and classification.

**Results:**

| Model | Accuracy level obtained for each class | | | | |
|---|---|---|---|---|---|
| | Entire mosquito | Abdomen | Head | Hind leg | Wing |
| ViT | 0.85 | 0.95 | 0.85 | 0.88 | 1 |
| Resnet50 | 0.95 | 0.97 | 0.95 | 0.70 | 0.95 |
| SwinT | 0.88 | 0.97 | 0.88 | 0.62 | 0.68 |

**Conclusion and Recommendation:** Preliminary findings suggest that ResNet50 performs best for differentiation of *Anopheles* and *Aedes* using whole-body and major anatomical features (head and abdomen), while ViT shows promise for wing and leg differentiation. Further studies with larger datasets are required.

**Keywords:** Automated mosquito identification, Deep learning, *Anopheles*, Aedes, Sri Lanka.

# Poster Presentations
# Clinical and Biomedical category

**PP-36 (130): The Blue-Carba Test: A simple and rapid method for detecting Carbapenemase producers**

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This study aimed to establish the Blue-Carba test (BCT), a simple and rapid colorimetric method for detecting carbapenemase production (via carbapenem hydrolysis) among Gram-negative bacteria (CR-GNB) in resource-limited settings according to a protocol by Pires, Novais, and Peixe (2013). Anonymized CR-GNB isolates (n=201) comprising *Klebsiella spp.* (17.9%), *Acinetobacter spp.* (28.4%), *Pseudomonas spp.* (18.5%), and other Gram-negative species (35.2%) were included. Positive and negative controls were validated using a previously characterized carbapenemase-producing strain and *E. coli* ATCC 25922, respectively. Among tested, 156 (77.61%) were positive and 45 (22.38%) were negative by the Blue-Carba Test (BCT). Using 89 PCR-confirmed isolates as the reference standard, BCT demonstrated a sensitivity of 90.6% (95% CI: 83.4 – 97.8%), a specificity of 8.0% (95% CI: 0 – 18.6%), and an overall diagnostic accuracy of 67.4%. A modification of the BCT using a rapid filter paper method, where test solution–soaked strips were inoculated with a small amount of culture, was also evaluated. This approach, tested on 50 PCR-confirmed isolates, showed 85% sensitivity, 20% specificity, and 72% diagnostic accuracy. The reduced specificity of the BCT may be attributed to non-carbapenemase-producing bacteria that possess β-lactamases or hydrolytic enzymes capable of weakly degrading carbapenems, thereby producing false positives. Factors such as low expression levels and slow hydrolysis may further contribute to misleading results. The BCT showed high sensitivity (90.6%), making it a potentially useful screening tool for carbapenemase detection. However, its low specificity limits reliability due to false positives. Further validation is recommended, including refinement of test protocols and strategies to minimise interference from non-carbapenemase β-lactamases. Comparison with molecular methods is crucial to establish diagnostic accuracy and assess suitability for routine use. The BCT may serve as an initial screening tool, while the rapid filter paper method shows promise but requires further validation and standardization before clinical use.

**Keywords**: Antimicrobial resistance, Blue-Carba Test, Carbapenamase, Carbapenem resistance, Gram-negative bacteria.

**PP-37 (ID 210): Outcomes of an Administrative Antimicrobial Stewardship Action Plan at Navy Hospital, Eastern Command: A Retrospective Comparative Evaluation**

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Antimicrobial resistance is a growing global concern, often driven by inappropriate use of broad-spectrum antibiotics such as Co-amoxiclav. At the Navy Hospital, Eastern Command (NH-EC), frequent empirical prescribing of Co-amoxiclav for respiratory infections prompted the introduction of an administrative antimicrobial stewardship (AMS) action plan to promote rational antibiotic use.

A retrospective comparative analysis was conducted using hospital pharmacy and laboratory records from 2021 (pre-intervention) and 2022 (post-intervention). The AMS plan, implemented from November 2021 to November 2022, required clinicians to perform appropriate investigations (FBC, CRP, cultures, ABST), apply clinical scoring systems (CURB-65, qSOFA), assess infection severity, and obtain a second opinion before initiating IV Co-amoxiclav in clinically stable patients. Data were collected from bed head tickets, laboratory records, and pharmacy records. Ethical approval and administrative authorization were obtained prior to data collection.

The annual defined daily dose (DDD) for oral Co-amoxiclav 625 mg decreased from 2,083 g in 2021 to 1,597.2 g in 2022 a 23.3% reduction. Similarly, the DDD for IV Co-amoxiclav declined from 333 g to 260 g (a 21.2% decrease), despite a 2.5% increase in respiratory infections during the same period. Statistical analysis (t = 1.35, p = 0.405) indicated that these reductions were not statistically significant. However, the downward trend reflects improved prescribing practices and early signs of AMS effectiveness.

In conclusion, the administrative AMS plan fostered rational antibiotic use and enhanced awareness among prescribers, even without statistically significant reductions. Sustained monitoring, continuous education, and broader AMS integration are recommended to strengthen antibiotic stewardship across naval healthcare facilities.

**PP-38 (ID 204): -Antimicrobial Resistance patterns of patients in Intensive Care Units at National Hospital and University Hospital Kotelawala Defence University**

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**Introduction:** Globally, AMR is estimated to cause approximately 700,000 deaths annually. ICU patients face a higher risk of infection because of various invasive procedures as well as the administration of medications. Additionally, the regular use of broad-range antibiotics in these contexts can lead to the emergence of resistant pathogens, making the management of infections even more challenging. Antimicrobial resistance occurs when bacteria, viruses, fungi, and parasites cease to react to antimicrobial drugs.

**Objectives:** The study aimed to investigate antimicrobial resistance patterns among patients in the intensive care units (ICU) in National Hospital, Sri Lanka and University Hospital KDU.

**Methods:** A quantitative descriptive cross-sectional study was conducted in selected hospitals in Colombo district, Sri Lanka. Multistage cluster sampling technique and random sampling technique were followed which included 311 samples including, blood, endotracheal secretions, tissue samples, sputum, urine, wound swabs, bronchoalveolar lavage and tracheostomy secretions. BHTs that contain at least one Culture and ABST Report were included in the study, and all the relevant data, including socio-demographic data, clinical information and microbiological findings, were recorded after a thorough assessment of the medical records.

**Results:** The study highlights prominent antimicrobial resistance (AMR) patterns in Intensive Care Unit patients, with Gram-negative bacteria demonstrating higher rates of resistance than Gram-positive bacteria. Significantly Acinetobacter spp. showed alarming resistance levels, including 91% resistance to ciprofloxacin, Piperacillin: 89%, Gentamicin: 90% while Coliform showed 69% resistance to Ceftriaxone, Piperacillin: 64% and 77% resistance to ciprofloxacin. Klebsiella pneumoniae displayed enhanced resistance (60%) to meropenem and complete resistance to amoxicillin and ciprofloxacin. Pseudomonas reached 53% to imipenem and 44% to meropenem respectively, indicating significant resistance carbapenems. The most common pathogen among Gram-positive bacteria was Enterococcus spp. which exhibited total resistance (100%) to cefuroxime and gentamicin. With 100% resistance to beta-lactams and carbapenems, Methicillin-Resistant Staphylococcus aureus (MRSA) showed multi-drug resistance. The study also found that characteristics like gender, age, admission diagnosis and recent antibiotic use did not exhibit statistically significant relationships with AMR, while the study did find that length of ICU stay was considerably related with AMR.

**Conclusions & Recommendations:** The findings of this study highlight the urgent need for enhanced antimicrobial stewardship programs (ASPs) to address the concerning levels of antimicrobial resistance (AMR). Considering the overall resistance of Gram-positive pathogens like MRSA and Enterococcus spp. and the high resistance rates of Gram-negative bacteria, including Acinetobacter spp., Coliforms, Klebsiella pneumoniae and Pseudomonas spp., indicates a major issue in the prevention of infections. To address the high burden of antimicrobial resistance observed in this study, we recommend implementing regular AMR surveillance in ICUs using standardized microbiology protocols (CLSI/EUCAST) to ensure consistent and comparable data. Strengthening infection prevention and control measures, is essential to reduce transmission. Additionally, enforcing a rational antibiotic policy through antimicrobial stewardship emphasizing appropriate antibiotic selection, timely de-escalation, and routine audits will help limit unnecessary antibiotic use.

**Keywords**: Antimicrobial resistance, Gram-negative bacteria, Gram-positive bacteria, Acinetobacter spp., Methicillin-Resistant Staphylococcus aureus (MRSA)

**PP-39 (ID 196) - Prevalence of Nasal Colonization of Methicillin-Resistant Staphylococcus aureus Among Patients Admitted to the Orthopeadics Unit at Colombo North Teaching Hospital-Ragama.**

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**Introduction:** Methicillin-Resistant *Staphylococcus aureus* (MRSA), a multidrug-resistant bacterium is a significant pathogen to cause bone and joint infections, challenging to treat due to its resistance to beta -lactam antibiotics. Nasal colonization is a risk factor, particularly in patients undergoing implantation of prosthesis in orthopaedic units.

**Objectives:** To determine the prevalence of nasal colonization and antibiotic susceptibility pattern, to describe the demographic and clinical characteristics of the patients, and to evaluate the associated factors for colonization of MRSA among patients admitted to orthopaedic ward, Colombo North Teaching Hospital (CNTH)- Ragama.

**Method:** This descriptive cross-sectional study was conducted in 227 adult patients in the orthopaedic unit of CNTH during February to May 2025. Associated factors for colonization, demographic and clinical data were obtained by an interviewer-based questionnaire. MRSA were isolated using chromogenic agar (CHROMagar™ MRSA) and identification was done according to laboratory manual (SLCM 2nd edition). Antibiotic susceptibility test (ABST) and minimum inhibitory concentration (MIC) were performed according to CLSI-M100 35th edition. Ethical approval, granted by ethics review committee of the Faculty of Medicine, University of Kelaniya, Sri Lanka. (P/165/12/2024)

**Results:** Among the study population, 51 % (n=116) were male and 49 % (n=111) were female with mean age of 50.9 years. Prevalence of nasal colonization of MRSA was 3.1% (n=7), potentially due to strict infection control measures within the unit. Majority (78.9%, n=.179) of admissions were following trauma. The duration of hospital stay >48h prior to sample collection (p ≈0.023) was significantly associated with colonization. Antibiotic susceptibility of MRSA isolates; Vancomycin and Cotrimoxazole 100% (n=7), Linezolid 85.71% (n=6), Gentamicin, Clindamycin, and Fusidic acid 71.42 % (n=5), Ciprofloxacin 57.14% (n=4), Tetracycline 42.85 % (n=3), Erythromycin 14.28% (n=1). All MRSA isolates demonstrated 100% sensitivity for Vancomycin with MIC <2 µg/ml.

**Conclusion:** The prevalence of MRSA nasal colonization among adult patients admitted to the orthopaedic unit at CNTH is 3.1%. The prolonged hospitalization (>48h) was significantly associated with colonization. 14.28% (n=1) resistance to Linezolid indicates possible emergence of Linezolid resistance in Sri Lanka.

**PP-40 (ID 243):  Seroprevalence of Herpes Simplex Virus Types 1 and 2 in Selected Risk Groups: A Retrospective Study in Sri Lanka during Year 2022**

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**Introduction:** Herpes simplex virus (HSV) types 1 and 2 are major public health concerns, with implications for neonatal health, maternal outcomes, and immuno-compromised populations. Serological testing for HSV antibodies (IgG, IgM) is vital for identifying past exposure, recent infections, and guiding clinical management. Despite disruptions caused by the COVID-19 pandemic, progress has been made in assessing HSV seroprevalence in key risk groups in Sri Lanka. Ethical clearance was obtained from the Ethics Review Committee of the Medical Research Institute.

**Objectives:** To analyze HSV-1 and HSV-2 seroprevalence in neonates, pregnant women, and immunocompromised patients using samples received at the National Reference Laboratory during year 2022, and to identify trends requiring clinical or public health interventions.

**Methods:** This retrospective descriptive study analyzed all available HSV-1 and HSV-2 IgG/IgM results from 1st of January 2022 to 31st of December 2022. Samples with missing data and duplicate samples from the same patient were excluded. Testing was performed using commercially available ELISA kits (EUROIMMUN®) with manufacturer-defined cut-offs. Data analysis involved descriptive statistics, and equivocal results were retained to highlight diagnostic uncertainty.

**Results:** During year 2022, 2,050 samples were tested for HSV-1 IgG, 2,135 for HSV-1 IgM, 2,082 for HSV-2 IgG, and 2,889 for HSV-2 IgM. Among neonates, HSV-1 IgG was positive in 68 neonates (8 equivocal), while HSV-1 IgM showed 3 positives and 1 equivocal. HSV-2 IgM and HSV-2 IgG were positive in 5 neonates. In pregnant women, HSV-2 IgM (n=3) indicated recent infection, and HSV-1 IgG (n=18) reflected prior exposure. Among immunocompromised patients (n=6), two were HSV-1 IgG positive.

**Conclusions & Recommendations:** Neonatal and maternal HSV IgM positivity indicates a significant risk of perinatal transmission, while high IgG positivity suggests common prior exposure, with neonatal IgG largely reflecting maternal antibodies. Strengthening maternal HSV screening, enhancing neonatal surveillance, and ensuring follow-up of equivocal cases are recommended. Incorporating HSV testing into antenatal care guidelines may further reduce transmission. Larger, more diverse studies are needed to improve generalizability.

**Key words**: Herpes Simplex Virus, Seroprevalence, Risk Groups, Sri Lanka

**PP-41 (ID 175): Optimizing Antimicrobial Stewardship in Critical Care using Explainable Large Language Models**

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**Introduction:** In ICUs, inappropriate antimicrobial prescribing persists because conventional decision support struggles to fuse notes with structured data and explain recommendations; published benchmarks show stewardship safety on mortality and gains in use and length of stay, underscoring the need for explainable, multimodal tools. This study evaluates an explainable LLM that integrates vital signs, laboratory results, and notes to improve accuracy, appropriateness, and time to appropriate therapy compared to specialist review.

**Objective:** To assess an explainable LLM that integrates ICU vitals, laboratories, and notes to generate real-time antibiotic recommendations, focusing on recommendation accuracy, prescribing appropriateness, and time to appropriate therapy versus infectious disease specialist review.

**Methods:** BioBERT was fine-tuned on MIMIC-IV ICU cases, incorporating microbiology data, and was coupled with retrieval-augmented generation. SHAP provided an interpretable rationale. Retrospective validation compared model outputs with specialist decisions across ICU encounters, using prespecified metrics for appropriateness (AUROC), accuracy, and time to therapy. Analyses included logistic regression, AUROC with DeLong tests, chi-square tests, and 95% confidence intervals.

**Results:** Retrospective validation demonstrated antibiotic appropriateness discrimination with an AUROC of 0.785 (95% CI, 0.727–0.843), as well as temporal and external AUROCs of 0.732 and 0.730, respectively. Earlier identification enabled regimen optimization approximately 48 hours before culture results. Directional gains were observed for recommendation accuracy and appropriateness compared to specialist review, supporting the prospective evaluation of time-to-appropriate therapy and clinical endpoints.

**Conclusions:** An explainable, multimodal LLM may enhance ICU antimicrobial stewardship by aligning guideline adherence with patient-specific factors and addressing prescribing gaps; the retrospective design and setting-specific data limit generalizability, supporting a prospective, multi-site evaluation with safety monitoring before clinical deployment.

**Recommendations:** Proceed with a prospective, multi-site evaluation; adapt guideline connectors to local formularies; and establish governance frameworks for continuous monitoring, algorithmic bias auditing, and safety oversight before clinical implementation.

**Keywords:** antimicrobial stewardship; critical care; explainable AI; large language models; SHAP

**PP-42 (ID 160): Association between *BRCA1* promoter methylation in peripheral blood DNA and sporadic breast cancer risk in postmenopausal women.**

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**Introduction:** Breast cancer is a multifaceted disease resulting from genetic and epigenetic changes. Although pathogenic mutations in the *BRCA1* gene are thoroughly studied, the methylation of its promoter, which leads to epigenetic silencing, has also surfaced as a possible alternative mechanism that influences gene expression and tumor formation. The utilization of peripheral blood DNA to assess germline *BRCA1* promoter methylation offers a method for non-invasive biomarker detection.

**Objectives:** This study aimed to investigate the association between *BRCA1* promoter methylation in peripheral blood DNA and the risk and clinicopathological features of sporadic breast cancer.

**Methods:** A collection of peripheral blood DNA samples from 30 postmenopausal women diagnosed with breast cancer and 30 healthy postmenopausal women of the same age was evaluated using methylation-specific polymerase chain reaction (MSP) after the DNA was converted with bisulfite. Descriptive statistics and the Chi-square test were used to examine the relationship with clinicopathological characteristics.

**Results:** *BRCA1* promoter methylation was detected in 3.3%(1/30) of breast cancer patients and was absent in healthy controls. There was no statistically significant association between *BRCA1* promoter methylation and breast cancer risk(p=0.49). No significant associations were found with age at menarche, parity, BMI, age at first pregnancy, breastfeeding, or contraceptive use. A significant association was observed with age at menopause(p=0.002). Tumor characteristics, such as histological type(p<0.001), showed a significant association with methylation status. Tumor grade, stage, lymph node involvement, and hormone receptor status [oestrogen receptor (ER), progesterone receptor (PR), human epidermal growth factor 2(HER2), and triple negative breast cancer (TNBC)] did not show any associations. The only methylated case involved a grade I tumor with mixed histology.

**Conclusion & Recommendations:** Germline *BRCA1* promoter methylation was detected at a low frequency in sporadic breast cancer patients and was absent in healthy controls. While its detection in a patient with early-stage disease may suggest a possible role in early tumorigenesis, nonetheless, its rare occurrence restricts its usefulness as a reliable predictive biomarker. Larger and multicenter studies are needed to determine its relevance in risk assessment and prognosis.

**Keyword**s: DNA Methylation, *BRCA1*, Breast Cancer, Promoter Region, Methylation Specific PCR

## PP-43 (ID 162): Study of Genetic variants *ASXL1* c.1773C>G (Tyr591Ter) and *ASXL1* c.1282C>T (Gln428Ter) in a Sri Lankan cohort of Myeloproliferative Neoplasm (MPN) patients.

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**Introduction:** Variants in the *ASXL1* gene hold both diagnostic and prognostic importance in Myeloproliferative Neoplasms (MPN), particularly in polycythemia vera (PV), essential thrombocythemia (ET), and primary myelofibrosis (PMF). However, the prevalence and clinical implications of Asian-specific *ASXL1* variants remain poorly defined. This study focused on two *ASXL1* nonsense variants, c.1773C>G p.(Tyr591Ter) (rs371369583) and c.1282C>T p.(Gln428Ter) (rs886041975), in a Sri Lankan cohort of MPN patients. These variants were selected based on their Asian-enriched frequencies and predicted pathogenicity in gnomAD and VarSome.

**Objectives:** The general objective was to study the prevalence and clinical significance of these *ASXL1* variants in diagnosed MPN. Specific objectives were to develop and optimize a laboratory protocol for variant detection, and to evaluate genotype–phenotype correlations with clinical, and hematological parameters.

**Methods:** Following ethical clearance (EC-24-150), 50 patients with confirmed PV, ET, or PMF attending the North Colombo Teaching Hospital hematology clinic were recruited. Variant selection was guided by gnomAD and Varsome databases. Tetra-primer ARMS-PCR assays, optimized with touchdown modifications, were designed for detection and validated by Sanger sequencing. Non-MPN samples were used only as negative controls for tetra-primer ARMS-PCR validation and were not included in genotype–phenotype analyses. Statistical analysis was conducted using IBM SPSS version 19.

**Results:** Sample size 50; PV-82% (n=41), ET-10% (n=5), PMF-8% (n=4), male to female ratio =2.3:1, mean time since diagnosis 10.8years respectively. Variant frequency *ASXL1*:c.1773C>G (Tyr591Ter): heterozygous-12% (n=6;PV=50.0%(n=3)), ET=33.3%(n=2), PMF=16.7%(n=1)), homozygous-0%, wild type 88% (n=44). *ASXL1*:c.1282C>T (Gln428Ter): variant=0%(n=0), wild type=100% (n=50). Phenotype-genotype correlations for variant positive versus variant negative cases respectively; mean haemoglobin:12.3g/dL;14.1g/dL($p$=0.052), mean haematocrit: 40.3%; 43.8% ($p$=0.165), platelets: 441.2x$10^9$/L; 342.1x$10^9$/L ($p$=0.223), and mean age (years) 62.83; 55.70($p$=0.218). However, none of these differences reached statistical significance (all p>0.05). Total receiving treatment: 100 (n=50); Aspirin only: 6% (n=3;ET), Aspirin & venesection: 26% (n=13;PV), Hydroxyurea: 64%(n=32; PV:ET:PMF=54% (n=27): 4% (n=2): 6% (n=3)) and Ruxolitinib: 2% (n=1;PMF).

**Conclusion & Recommendations:** The *ASXL1* c.1773C>G variant is reported for the first time in Sri Lankan MPN patients and was present across all subtypes. Significant genotype-phenotype correlations were not found. The absence of *ASXL1*c.1282C>T(Gln428Ter) variants suggest rarity or mutant cell clone deletion following therapy. The findings need validation using larger cohorts and parallel sequencing-based screening could complement PCR assays for broader mutation detection. Follow-up of the variant positive group and further *ASXL1* mutation profiling is warranted.

**Keywords:** Sri Lankan Myeloproliferative neoplasms, *ASXL1* c.1773C>G, *ASXL1* c.1282C>T, Tetra-primer ARMS-PCR, Touchdown-PCR

## PP-45 (ID 156): Effect of Ring Structures on Rectum Dose Evaluation in Hypofractionated Prostate Cancer: A CT-Based Planning Study

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**Introduction:** Prostate cancer radiotherapy requires precise target coverage while minimizing toxicity to surrounding organs, particularly the rectum. Incorporating ring structures around the planning target volume (PTV) is a strategy to enhance conformity and reduce rectal dose.

**Objective:** To evaluate the dosimetric impact of single ring structures placed at increasing distances from the PTV on rectum dose in hypofractionated prostate cancer intensity-modulated radiotherapy (IMRT).

**Methods:** CT datasets of 20 anonymized prostate cancer patients were used to generate a total of 80 IMRT treatment plans using the Varian Eclipse planning system. Four different plans were created for each patient: Plan 1 (no ring), Plan 2 (ring at 0.5 cm), Plan 3 (ring at 1.0 cm), and Plan 4 (ring at 1.5 cm from the PTV). Each plan prescribed 60 Gy in 20 fractions. Dose–volume histograms (DVHs) were analyzed for PTV coverage (D99), conformity index (CI), homogeneity index (HI), and rectum dose parameters (D50, D40, D30). Statistical analysis was performed using one-way ANOVA with Tukey's HSD test, with $p < 0.05$ considered significant. All CT datasets were fully anonymized to ensure patient confidentiality.

**Results:** PTV coverage (D99) remained consistent across all plans (99.1–99.3 ± 0.8–0.9 Gy, $p > 0.05$). CI improved progressively from 0.59 ± 0.05 (Plan 1) to 0.65 ± 0.05 (Plan 2), 0.70 ± 0.06 (Plan 3), and 0.74 ± 0.06 (Plan 4) ($p < 0.001$). HI remained stable across plans (1.05–1.06, $p > 0.05$). Rectum doses decreased with increasing ring distance. Mean rectal D50 decreased from 41.5 ± 1.7 Gy (Plan 1) to 41.4 ± 1.6 Gy (Plan 2), 39.6 ± 3.5 Gy (Plan 3), and 38.9 ± 2.6 Gy (Plan 4). D40 decreased from 45.5 ± 1.9 Gy (Plan 1) to 44.9 ± 1.9 Gy (Plan 2), 42.9 ± 4.1 Gy (Plan 3), and 42.1 ± 3.0 Gy (Plan 4). D30 decreased from 49.0 ± 1.9 Gy (Plan 1) to 48.3 ± 2.1 Gy (Plan 2), 45.9 ± 4.6 Gy (Plan 3), and 45.3 ± 3.6 Gy (Plan 4). All reductions in rectum doses were statistically significant ($p < 0.05$).

**Conclusions& Recommendations:** Incorporating a ring structure significantly improves dose conformity and reduces rectum doses in hypofractionated prostate IMRT without compromising PTV coverage. Placement at 1.5 cm from the PTV (Plan 4) provided the most favorable balance of dose conformity and rectal sparing, indicating that ring structures can be an effective strategy for optimizing rectal protection in clinical prostate radiotherapy planning. Ring structures should be considered in prostate radiotherapy planning to optimize rectal dose sparing. Further clinical correlation studies are recommended.

**Keywords:** Prostate cancer, IMRT, hypofractionation, ring structure, rectum dose

# PP-46 (ID 208): Quality Assurance of Elekta Motorized Wedges: Dosimetric Validation Using a 2D Ion Chamber Array

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**Introduction**: Accurate dosimetric verification of motorized wedge (MW) filters is essential to ensure radiotherapy treatment quality. Elekta linear accelerators employ a single MW system capable of producing wedge angles (WA) up to 60°, yet independent verification of WA accuracy and wedge factor (WF) correlations remains limited in Sri Lankan clinical practice.

**Objective**: This phantom-based study aimed to verify MW angles, quantify the correlation between WF and field size, and compare planned versus delivered doses using a two-dimensional ion chamber array (I'Matrixx) for an Elekta Synergy linear accelerator at the National Cancer Institute, Maharagama.

**Methods**: Measurements were performed for 4, 6, and 15 MV photon energies at wedge angles of 15°, 30°, 45°, and 60°. Before data acquisition, the I'Matrixx system underwent full calibration and reproducibility checks. Profiles were analyzed at 10 cm depth (5 cm for 4 MV) using I'Matrixx and OmniPro software. WF values were derived from dose ratios (with/without wedges) for field sizes from 5×5 $cm^2$ to 25×25 $cm^2$. Delivered-dose verification was performed using an FG-65 Farmer ionization chamber and slab phantoms, with results compared against 3D TPS-calculated doses.

**Results**: Measured wedge angles deviated by < ±2° from TPS values, and dose differences remained within ±2%, satisfying ICRU 24 and AAPM TG-142 tolerance limits. WF increased slightly with field size ($r = 0.98$, $p < 0.01$) and decreased with wedge angle ($r = 0.99$, $p < 0.01$). No outliers exceeded tolerance thresholds. Polynomial regression equations accurately predicted WF for varying field sizes and wedge configurations.

**Conclusion**: The Elekta MW system demonstrated excellent dosimetric accuracy and reproducibility within international tolerance limits. The validated I'Matrixx-based method offers an efficient QA solution for routine MW verification. Predictive WF estimation enhances clinical workflow efficiency, reducing physicist workload while maintaining precise dose delivery.

**Keywords:** Elekta linear accelerator, motorized wedge, wedge angle, wedge factor, I'Matrixx, dosimetry verification, quality assurance.

**PP-47 (ID 146): Audit to assess the standards of care in patients with diabetes and hypertension at a tertiary care medical clinic in central province, Sri Lanka.**

Risly NMM[1], Rupasinghe S[2,] Jayasinghe IK1, Athauda N[1], Wijekoon V1, Azher A1, Bowattage BGLVB[1]

[1]National Hospital Kandy, [2] Sri Jayewardenepura General Hospital.

**Introduction**: Diabetes mellitus and hypertension are commonly prevalent non-communicable diseases (NCD) in Sri Lanka.

**Objective**: To assess adherence to national standards for screening, complication monitoring, and lifestyle counseling among patients with diabetes and hypertension at a tertiary care medical clinic.

**Methods**: A descriptive, cross-sectional audit was conducted over 4 months in 2025 among adult patients with Diabetes and/or hypertension attending follow-up. Data was collected via a patient-based questionnaire covering required domains. Patients with acute illnesses were excluded. The audit standard was set as ≥80% expected to undergo annual screening and counselling as per national guidelines. Pilot testing refined the data collection tool. After the results, next audit cycle is planned in 24 months along with implementation of service improvements.

**Results:** Among 279 enrolled participants, 23.6% had diabetes, 35.1% had both diabetes and hypertension and 41.2% both. General complication awareness (63.4% for diabetes and 75.6% for hypertension) and specific knowledge (e.g., 10.2% aware of retinopathy, 22.6% of foot ulcers in diabetes; 6.8% of hypertensive retinopathy) were substandard yet general superficial awareness was comparatively better (e.g., In diabetes; recognition of ocular involvement in 71.2%, foot numbness in 61% and blurred vision as 61.1% in hypertension). Assessed knowledge of acute metabolic and infectious complications (e.g.,3.4% for DKA and 20.3% for infection) was substandard. Screening rates were suboptimal and didn't meet the expected standard of ≥80% (53.1% ocular for diabetes, 31.8% ocular for hypertension). Medications reviews and alterations occurred at every visit for 39.4%; dietary advice for 54.1%, exercise for 33.7%, smoking cessation for 14.7%. Patient perceived satisfaction was high (60.2% rated treatment at clinic is very effective), but long waits were a common concern (10.3%).

**Conclusions & Recommendations:** Findings indicate partial compliance with recommended standards for screening and lifestyle counseling highlighting needs for structured education, standardized protocols, and operational enhancements to optimize patient flow. Implement dedicated clinics (which were implemented in our unit) by enhancing chronic care aligned with guidelines.

**Key words**: Non-Communicable Diseases, Clinical Audit, Complication screening.

**PP-47 (ID 146): Audit to assess the standards of care in patients with diabetes and hypertension at a tertiary care medical clinic in central province, Sri Lanka.**

Risly NMM[1], Rupasinghe S[2,] Jayasinghe IK1, Athauda N[1], Wijekoon V1, Azher A1, Bowattage BGLVB[1]

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**Key words**: Non-Communicable Diseases, Clinical Audit, Complication screening.

**PP- 48 (ID 180): A Clinical Audit on the impact of a low salt diet on Blood Pressure control in the primary care setting**

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[1]*Dedunupitiya Primary Medical Care Unit,* [2]*National Hospital, Kandy*

**Introduction:** The recommended daily salt intake is less than 6g per day, about 1 level teaspoon. Several Randomized Controlled Trials have demonstrated that salt reduction reduces Blood Pressure (BP) in hypertensive and normotensive people in addition to antihypertensives. The World Health Organization has stated that "reducing salt intake is one of the most cost-effective measures countries can take to improve population health outcomes". Dietary counselling is limited in the primary care setting in Sri Lanka.

**Objectives:** To evaluate the adherence to best practices and assess the effectiveness of patient education on a low salt diet in improving BP control among medical clinic attendees at a primary care medical unit.

**Methods:** A clinical audit was conducted among patients at the Dedunupitiya PMCU medical clinic. All patients who attended the NCD clinic in May 2023 were included in the audit. As part of routine consultation, BP was measured correctly using a validated manual blood pressure meter. Health education was given through individual counselling by the doctor. All the patients were followed up monthly, and patients who did not require antihypertensive drug modification during the period were re-audited 12 weeks later.

**Results:** Of the 151 patients, 111 did not require antihypertensive drug optimization during the three months; 81 were female, and 30 were male. All patients reported adhering to a low-salt diet. The mean age of the population was 68 years. Before the intervention, the mean systolic BP was 131.2 mmHg, and the mean diastolic BP was 83.4 mmHg. After three months, the mean systolic BP was 127.7mmHg, and the mean diastolic BP was 78.1mmHg, representing a modest but meaningful BP reduction with minimal resource investment.

**Conclusions:** This audit demonstrated a modest yet clinically relevant reduction in BP following dietary salt reduction counselling in the primary care setting. Incorporating structured salt-reduction education into routine NCD clinics could significantly enhance hypertension management

**Keywords:** Salt reduction, Blood pressure control, Primary care, Clinical audit

**PP-49 (ID 164): Study of neonates with bilious vomiting due to congenital anatomical abnormalities including mode of diagnosis, pathology, corrective surgery and outcome at a tertiary care referral hospital**

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*[1] Colombo North Teaching Hospital Ragama*

**Introduction**: Bilious vomiting in neonates is a salient clinical feature of congenital anatomical intestinal obstruction. Delayed diagnosis and intervention causes fluid, electrolyte and metabolic derangement, aspiration pneumonia and, ischaemic perforation of gut causing loss of life. Data of all neonates with bilious vomiting due to congenital anatomical intestinal obstruction managed at single paediatric surgeon led neonatal surgical center at Colombo North Teaching Hospital(CNTH) Ragama catering to Sri Lanka's most densely populated Gampaha District analysed from 2023.08.01-2025.01.31.Birth data, risk factors, antenatal imaging, clinical presentation, diagnostic-radiology, pathological-anatomy, surgery, operative-findings, postnatal events and outcome analysed.

**Objectives**: To study pathological spectrum, patient related factors, mode of diagnosis, management and outcome of neonates and, share knowledge with stakeholders intending to improve outcome.

**Methods**: Data collected retrospectively from clinical records.

**Results**: Fifteen neonates were studied. Pathological spectrum: 3malrotated midgut, 8duodenal atresias(DA) and, one each of jejunal-atresia, jejunal-stenosis, ileal-atreia and congenital intestinal-bands. Ten(66.6%) were born pre-term. Gestational age ranged:28/52-38/52 with mean 34.23/52. Birth-Weight ranged:1.17kg-2.9kg with mean 2.25kg. Twelve(80%) had Low Birth Weight(LBW). Diagnostic radiology:x-ray abdomen in all and, Upper-Gastrointestinal contrast studies in midgut-malrotation and jejunal-stenosis.All neonates with pathologies other than DA underwent surgery and survived. Of 8 DAs; all had LBW. Seven were pre-terms including 3'syndromic' neonates. Only 6 were stable to undergo duodeno-duodenostomy. The term-born recovered uneventfully. All 5 operated pre-terms developed sepsis but survived >5 days post-operatively. Finally one pre-term recovered.

**Conclusions & Recommendations:** Pathologies causing bilious vomiting included duodenal atresia 53%, malrotation of midgut 20% and, 6.6%each of jejunal-atresia, jejunal-stenosis, ileal-atreia and congenital intestinal bands. Sepsis was the major cause for morbidity and mortality. Multi-disciplinery educational activities on early diagnosis, management and, combatting neonatal-sepsis conducted for neonatal teams at hospital and regional units.Education of stakeholders of neonatal teams on timely diagnosis and management combatting sepsis to improve survival of neonates with bilious-vomiting at nationwide forums is recommended.

**Key words**: Bilious Vomiting in Neonates, Congenital anatomical intestinal obstruction in neonates, Anatomical causes of congenital intestinal obstruction in neonates

## PP-50 (ID 137): Effective dose-rate variation over time in RAI treated thyrotoxicosis patients

Upul S. H.[2], Jayawickrama O. S.[1], Warusapperuma W. K. S. R.[1], Nisansala G. D. A. G.[1], Vidanapathirana C. M.[2], Weerasinghe S.[2], Wickramasinghe J. S.[1*]

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Thyrotoxicosis is treated with low doses of radioactive iodine-131 (RAI). Treated patients become temporary sources of external radiation, which is a concern of radiation protection. However, there are limited data on post therapy dose reductions. The main aim of the current study is to evaluate the effective dose rates in thyrotoxicosis patients.

The recommended doses of RAI for hyperthyroidism are 10 and 20 mCi. Twenty patients (ages: 18–60 years) who received low-dose RAI were recruited with their informed consent (Ethical approval: EC-24-147). Dose rate measurements were performed using a calibrated portable radiation survey meter at 1 meter from the patient. Measurements were taken immediately after administration ($T_0$), at 2 weeks ($T_2$), and at 4 weeks ($T_4$) post-administration. Data were analyzed using descriptive statistics to evaluate temporal dose reduction. The effective dose rates at $T_0$ among patients varied from 10.9 - 49.7 µSv/h which gives a mean of 26.5 µSv/h. A substantial decline was observed over time, with mean dose rates reducing to 3.9 µSv/h at $T_2$ (85.2%) and to 0.8 µSv/h at $T_4$ (97.0%). The dose rate at $T_2$ varies from 1.07 - 9.13 µSv/h and at $T_4$ it varies from 0.04 - 3.64 µSv/h. The results indicate that there is a large variation of the effective doses at 1 m distance from the patient among individual patients. Although there are no direct standard guidelines given by the authorities, it is advised to consider the effective dose to the relatives and the caregivers. These findings provide quantitative evidence to suggest a timely review of the current national guidelines for minimizing exposure to the public. Further studies are required to assess the individual factors such as patients' interpersonal interactions, occupational and public exposures, and environmental factors.

**PP-51 (ID 221): The Perception of 3rd Year Nursing Students Regarding Adherence to Clinical Procedures in Government Nursing Schools in Sri Lanka**

Kumari MDNP[1], Thalagala TRJ[2], Samarasekara PMAK[3], Attygalle DSV[4], Krishanthi KMDG[5]

[1]*Nursing school Rathnapura,* [2]*Nursing school Kalutara,* [3]*NIHS -Kalutara,* [4]*Nursing school -Batticaloa,* [5] *Nursing school- Colombo*

**Introduction:** Adherence to clinical strategies is essential to maintain patient safety and quality of nursing care. Even though there is a nationally standardized nursing curriculum, procedure guideline adherence varies between training settings, reflecting a lack of understanding about factors that influence compliance.

**Objective:** To explore the perception of 3rd-year nursing students regarding adherence to clinical procedures in Government Nursing Schools in Sri Lanka.

**Methods:** This descriptive cross-sectional study among 608 students used a pretested questionnaire to assess key factors using a Likert scale. Data were analyzed descriptively and with chi-square tests. Ethical clearance was obtained from the Ethics Review Committee of the National Institute of Health Sciences.

**Results:** Over 70% of students identified key personal barriers, including limited skills, difficulty recalling the procedural steps, and reduced confidence, with insufficient skills (71.7%) and forgetting steps (72.4%) being most prevalent. Fear of patients and inadequate knowledge, also over 70% each, impeded adherence. The environmental constraints most frequently noted included inadequate supervision from nursing officers (55.2%), limited time to conduct the procedure (55.6%), and high patient loads (64.7%). Institutional influences were strong, as many students identified restricted access to skill labs, teaching methods, and tutor supervision as challenges; tutor motivation and skills-lab adequacy were representative concerns at 76.4% and 73.4%, respectively. Supportive peers and nursing staff were recognised as key facilitators of adherence.

**Conclusions & Recommendations:** The findings indicate that the factors affecting adherence are interlinked: personal, clinical, and institutional. Limitations in skill, lack of supervision, and resource constraints arise as major barriers. Strengthening supervision, improving skills laboratories, providing adequate resources, and developing a supportive clinical environment are essential. Enhancing teaching methods, motivation, and mentorship may further encourage safe and effective nursing practices.

**Keywords:** Clinical Competence, Practice Patterns, Nurses, Health Knowledge, Attitudes

**PP-52 (ID 234): Strengthening Perioperative Nursing Education: Appraisal of Clinical Mentoring Competence of Operating Room Nurses**

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**Introduction:** Clinical placements are an essential component of nursing education, enabling student nurses to apply theoretical knowledge and develop clinical competencies. Mentors play a key role in the clinical setting, and mentors' competencies are essential for effective clinical mentoring. The operating room (OR) provides a unique environment for students to acquire perioperative nursing skills. However, in the Sri Lankan context, the processes and effectiveness of clinical mentoring in OR settings remain underexplored.

**Objective:** This study appraises the current clinical mentoring procedure of student nurses in the ORs of National Hospital Kandy (NHK) with the Mentors' Competence Instrument (MCI).

**Method:** A quantitative, non-experimental, descriptive design was used to investigate operating room nurses'(ORNs) competencies in clinical mentoring at the ORs of NHK. Data collection was done in January of 2024. All eligible ORNs were invited, but 94 volunteered to respond to the MCI. Descriptive statistics which include frequencies, percentages, means and standard deviations (SDs) were used to analyze data. Ethical clearance was obtained from the Ethics Review Committee at NHK.

**Results:** The MCI showed excellent reliability (Cronbach's α = 0.977)**.** The ORNs' overall student mentoring competence is above the required threshold, with mean domain scores 2.07 - 2.37 on a 0 –3 scale, with a cut-off value of 128, meaning they meet the study's criterion for being *competent* mentors. They showed competency in all domains of MCI as Mentoring practice in workplace (mean = 2.26 (0.09)), mentoring practices between student, teacher and mentor (mean = 2.27 (0.01)), mentor characteristics (mean = 2.37 (0.13)), identifying individual needs of students for mentoring (mean = 2.07 (0.27)), motivation of mentor (mean = 2.34 (0.10)), supporting the learning process of student (mean = 2.24 (0.07)), goal orientation in mentoring (mean = 2.19 (0.08)), reflection during mentoring (mean = 2.28 (0.06)), student-centered evaluation (mean = 2.24 (0.05)) and constructive feedback (mean = 2.28 (0.05)). The competency was relatively lower in domains of identifying individual needs of students for mentoring (mean = 2.07 (0.27). The overall mean scores indicate a moderately high level of competence, with low variability across respondents, suggesting consistent mentoring capabilities within the group.

**Conclusions:** Based on the MCI cut-off score of 124, the ORNs at NHK demonstrated mentoring competence levels that are statistically significant and exceed the threshold for acceptable performance, showing that ORNs possess the requisite competencies to effectively mentor student nurses in the OR setting, thereby contributing positively to perioperative nursing education outcomes.

**Key Words:** "Current practice", "Operating Room Nurses", "Clinical Mentoring", "Operating Rooms" and Mentors' Competence Instrument".

**PP-53 (ID 168): Demographic Characteristics of Thyroid Cancer Patients Treated with 100 mCi Iodine-131 at the National Cancer Institute, Maharagama (2023–2025)**

Weerasinghe ANP[1], Samanthika HVR[1], Upul PDSH[1], Vidanapathirana CM[1], Wickramasinghe TP[1]

[1]*National Cancer Institute, Maharagama, Sri Lanka*

**Background:** Iodine-131 therapy is a standard treatment modality for differentiated thyroid cancer.

**Objective:** The objective is to provide insight into disease patterns and treatment trends in Sri Lanka understanding demographic characteristics of patients receiving a fixed 100 mCi dose.

**Method:** A descriptive retrospective analysis was conducted using records of thyroid cancer patients treated with 100 mCi Iodine-131 at the National Cancer Institute, Maharagama, between January 2023 and June 2025. Data on age, gender, and province of residence were collected and analyzed using Microsoft Excel software. All the types of thyroid cancers (papillary, follicular, Medullary) were selected.

**Results:** A total of 1332 patients were included. The mean age range was 45 ± 5 years. The majority were female (74.5%), with male patients accounting for 25.5%. The highest proportion of patients were from the Western Province (54%), followed by Sabaragamuwa (11%), Southern (9%), North Western (9%), Central (5%), Eastern (5%), North Central (4%), Northern (2%), Uva (1%) provinces. Districts belonging to Western Province showed the percentage of Iodine-131 patients as Colombo (41%), Gampaha (39%) and Kalutara (20%). From 2023 to 2025, total patient numbers show a continuous decline across all years. This downward trend likely affects most provinces similarly, with the Western Province continuing to contribute the highest number of patients each year.

**Conclusions:** Thyroid cancer patients receiving 100 mCi Iodine-131 therapy were predominantly female and middle-aged, with the largest patient share from the Western Province Colombo District. These findings highlight demographic patterns that may support upcoming healthcare planning and resource allocation.

**Keywords**: Thyroid Cancer, Iodine-131 Therapy, 100 mCi, Demographic Profile

**PP-54 (ID 191): Formulation of Diclofenac Sodium and Eucalyptus Oil-Loaded Chitosan Nanoparticles and Evaluation of Comparative *In-Vitro* Anti-Inflammatory Effect with their Raw Drug Forms**

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Inflammation is a complex biological response often associated with tissue damage, pain, and impaired cellular function, where conventional anti-inflammatory therapies may lead to systemic side effects due to nonspecific drug distribution. This study aimed to formulate diclofenac sodium and eucalyptus oil-loaded chitosan nanoparticles and, compare *in vitro* anti-inflammatory effects with their corresponding raw drug forms. Chitosan was dissolved in 1% acetic acid to obtain chitosan solution. Scanning Electron Microscope (SEM), Fourier-transform infrared spectroscopy (FTIR) and X-ray diffraction (XRD) methods were used to characterize the chitosan. Diclofenac sodium and eucalyptus oil were loaded into chitosan nanoparticles using ionic gelation method. The supernatant of each solution was used to determine the drug encapsulation efficiencies and the method was triplicated. Both raw drugs and drug-loaded nanoparticles were characterized using FTIR and XRD methods. Anti-inflammatory effects of both raw drugs and drug loaded nanoparticles were assessed using *in vitro* heat-induced hemolysis test, by preparing concentration series. Drug release kinetics of nanoparticles were monitored over 24 hours. SEM analysis of chitosan indicated the presence of nano sized particles. XRD and FTIR data showed successful loading of drugs into nanoparticles. Encapsulation efficiencies were 23% for diclofenac sodium and 54% for eucalyptus oil, comparable to ranges reported for similar polymeric nanoparticle formulations. Raw diclofenac sodium showed a higher hemolysis, reaching 13.84% at 10 mg/mL, the lowest concentration, while diclofenac sodium-loaded nanoparticles exhibited hemolysis percentage, 4.43% at the lowest dose. In contrast, crude eucalyptus oil showed higher hemolysis, 19.68% at the lowest concentration, whereas eucalyptus oil-loaded nanoparticles significantly reduced hemolysis to 13.06%, demonstrating improved anti-inflammatory potential after encapsulation. Higuchi kinetic model was most appropriate model to describe the sustained releasing kinetics of both drugs from nanoparticles. These findings suggest that the chitosan nanoparticles enhance the bio-compatibility and anti-inflammatory efficacy of both diclofenac sodium and eucalyptus oil compared to their raw forms. Furthermore *in-vivo* studies and cytotoxicity assessments are required to validate these outcomes before clinical applications.

**Key words:** Drug loading, Chitosan nanoparticles, Anti-inflammatory activity, Diclofenac sodium, Eucalyptus oil

## PP-55 (ID 159): Compliance and Adverse Effects of Diazepam in the Sri Lankan Clinical Setting

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**Background**: Diazepam is widely prescribed for anxiety, insomnia, and pain which carries known risks of dependence and withdrawal with prolonged or unsupervised use. In Sri Lanka, limited data exist regarding prescription patterns, treatment adherence, and adverse outcomes associated with Diazepam use. Understanding this is crucial for optimizing clinical outcomes and minimizing harm.

**Objective:** To assess compliance, dosage patterns, and adverse effects of Diazepam among Sri Lankan patients and analyze their association with symptom improvement and sleep quality.

**Method**: A retrospective study was conducted using hospital records of 198 patients aged 32 – 80 years. Key variables included patients' demographics, dosage levels, treatment duration, sleep patterns before and after treatment, presenting symptoms and treatment adherence. Statistical analyses, including correlation tests and comparisons were performed using standard statistical software.

**Results**: The cohort had a female-to-male ratio of 51:49. The most common presenting complaints were sleep disturbances (38%), anxiety (34%) and body aches (28%). Post treatment, 65% of patients reported improved sleep quality and 71% experienced symptom relief, particularly among those with moderate to high adherence. Signs of dependence were observed in 18% of cases, predominantly in patients on higher doses and longer treatment durations. A positive correlation was observed between higher adherence and improved sleep outcomes. ($r=0.62$, $p<0.01$)

**Conclusion**: Diazepam is effective in symptom relief when used under proper supervision with moderate to high compliance. This study highlights the importance of monitoring addiction risk. Structured dosing, duration control, and compliance tracking are key to minimizing dependency while maintaining therapeutic outcomes. Diazepam should be prescribed only for short term use under strict medical supervision. Regular follow up and deprescribing protocols should be part of long-term benzodiazepine management.

**Key words:** Diazepam, anxiety, sleeping issue

# Poster Presentations
# Oral Health category

**P-56 (ID 197): Trends in School Oral Health Service Delivery in Kalutara District During and After the COVID-19 Pandemic**

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**Introduction**- School dental services provide preventive, promotive, and curative care for children aged 3–13 years. The COVID-19 pandemic, which was widespread from 2020-2021, disrupted school health programmes globally. Provision of oral health services was also greatly affected during this time. Assessing trends in service delivery before, during, and after the pandemic is essential to understand its impact on school oral health services.

**Objective**- To analyze trends in school dental service delivery in Kalutara District before, during and after the COVID-19 pandemic

**Methods**- A retrospective trend analysis used secondary data from school dental service reports in Kalutara from 2019-2024. Screening percentages (percentage of children screened from the target population), data on preventive interventions (Fluoride varnish and Fissure Sealant) and treatment procedures were extracted to Excel. Percentage changes and interrupted time series methods assessed the magnitude of service disruption and recovery trends.

**Results**- School dental screening percentage declined by 53% in 2020 compared to 2019. In 2021, both screening and coverage percentages decreased by 47% and 55% respectively, relative to 2019. While both preventive (90%) and curative services (76%) were disrupted, this was more prominent in preventive services. Post-COVID period (2023–2024) demonstrated a gradual increase in service delivery; however, coverage remained significantly below pre-COVID levels, with a 4% reduction in screening (97.0% vs. 93.0%; $p < 0.0001$) and a 2.5% reduction in treatment (89.0% vs. 86.5%; $p < 0.0001$) compared to 2019.

**Conclusions & Recommendations** - COVID-19 pandemic caused a substantial disruption to school dental service delivery, with preventive services more affected than curative services. Although services have improved since 2022, there still remains a deficit in service provision from the pre-COVID period. Strengthening school dental services to withstand service disruptions from pandemics, particularly its preventive arm via innovative service delivery techniques is critical in safeguarding children's oral health in future crisis situations.

**Key words:** *school dental services, COVID-19, service disruption, oral health, trend*

**PP-57 (ID 228): Assessment of Local Anesthetic Wastage, Unnecessary Dosing, and Associated Cost Implications in the Oral Surgery Clinic of the Faculty of Dental Sciences, University of Peradeniya – An Observational Study**

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**Introduction**: Local anesthetics (LAs) are essential for pain-free dentistry, yet wastage and inappropriate dosing represent avoidable costs in a resource-limited healthcare system. Although anesthetic drug wastage has been extensively studied in medical settings, quantitative data in dental teaching clinics remain scarce. These inefficiencies strain public resources and highlight training gaps that may compromise patient safety.

**Objectives:** To quantify LA wastage during student-performed oral surgery procedures, assess adherence to dosing guidelines, and evaluate students' awareness of LA protocols.

**Methods**: A prospective observational and cross-sectional study was conducted at the Oral Surgery Clinic, FoDS, University of Peradeniya. Of 223 single-tooth extractions performed by 7th-semester students, 163 first-attempt cases were included. Withdrawn, administered, and wasted LA volumes were documented by trained observers. A pre-rotation questionnaire assessed awareness of techniques, Maximum Recommended Therapeutic Doses (MRTDs), and perceptions of wastage. Descriptive statistics were analyzed using Python.

**Results:** Mean LA wastage was 29% per procedure, with only 23% achieving zero residual volume. Molar extractions requiring complex blocks accounted for highest wastage. Technique adherence exceeded 90%, but volume adherence was variable, particularly for palatal injections, where only 7% of students adhered to MRTDs. Awareness of common techniques was >90%, but only one-third of students correctly recalled MRTDs for palatal injections. Perceived wastage (>50%) exceeded actual wastage (29%). Cumulatively, 145 mL was wasted across 163 procedures (~5 vials), costing 685 LKR.

**Conclusions & Recommendations:** Nearly one-third of each vial was wasted. LA wastage in student-performed procedures is significant and driven by inaccurate dosing practices and gaps in guideline awareness. Although the technique selection was appropriate, the limited knowledge of MRTDs undermined efficiency and safety, reflecting an opportunity for cost-saving interventions in resource-limited dental teaching environments.

Incorporate targeted reinforcement of dose guidelines and in-clinic feedback sessions into curricula to improve patient safety and cost efficiency while reducing wastage.

**Keywords:** Local anesthetic wastage, dental education, dosing adherence, awareness, cost efficiency.

**PP-58 (ID 222): Study on Toothbrushing Knowledge and Practices Among Dental Clinic Patients at the National Institute of Infectious Diseases**

Lokuge RP, Thantrige RA, Dilrukshi UKR, Wasantha WNAD, Gnanarathna BACL

**Introduction:** Poor oral hygiene is a major global health concern, with the WHO estimating that nearly 3.5 billion people are affected by preventable oral diseases. In Sri Lanka, dental caries and periodontal disease remain highly prevalent. This study assessed toothbrushing knowledge and practices among patients attending the NIID Dental Clinic to identify gaps requiring targeted interventions.

**Objective:** To evaluate toothbrushing knowledge and practices among dental clinic patients and to determine demographic and behavioral factors associated with oral hygiene outcomes.

**Methods:** A cross-sectional study was conducted from 12 May to 8 June 2025 among 95 patients at the NIID Dental Clinic. Data was collected using a structured questionnaire containing self-administered and dental surgeon-completed sections. The questionnaire was locally developed based on oral health education guidelines and pilot-tested for clarity. Variables included age, education, brushing technique, oral hygiene satisfaction, gum health, and night-time brushing habits. Ethical approval was obtained from the NIID Institutional Ethics Committee. Data were analyzed using descriptive statistics and chi-square tests, with $p < 0.05$ considered statistically significant. Convenience sampling was used.

**Results:** Correct brushing technique was demonstrated by 22% (n = 21); among them, 34% were satisfied with their oral hygiene. In contrast, only 5.4% of those with incorrect technique reported satisfaction ($p < 0.01$). Overall satisfaction was 14.7% (n = 14). Younger participants (<30 years) had significantly poorer brushing practices and lower satisfaction compared to older groups ($p < 0.05$). Night-time brushing showed a strong relationship with outcomes: all participants who skipped night-time brushing reported dissatisfaction ($p < 0.01$). Incorrect technique was associated with bleeding gums, tooth sensitivity, and frequent sweet consumption. Higher education levels were significantly associated with correct technique ($p < 0.05$).

**Conclusions:** Correct brushing technique and night-time brushing were strongly associated with better oral hygiene satisfaction. Younger adults demonstrated poorer practices, indicating a need for targeted education. The low satisfaction rate highlights gaps in oral hygiene behaviors among clinic attendees.

**Keywords:** Toothbrushing, Oral Hygiene, Patient Practices, Oral Health Education, Dental Health, Cross-sectional Study

# Poster Presentations-Ayurveda Category

**PP-59 (ID 155): A Comparative Descriptive Study on Variations in Treatment Duration and Methods for Ayurveda Wellness vs. Medical Tourism in India and Sri Lanka.**

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**Introduction**: Ayurveda is a cornerstone of traditional healthcare and wellness tourism in South Asia, particularly in India and Sri Lanka. Both countries preserve rich classical Ayurveda traditions, yet each adapts treatments within evolving wellness tourism and medical tourism sectors differently. Understanding treatment duration, therapeutic methods, and adherence to classical protocols is crucial for maintaining treatment authenticity and optimizing patient outcomes.

**Objective**: To comparatively analyze prescribed treatment durations, therapeutic methods (*Shamana* vs. *Shodhana*), and clinical approaches in Ayurveda wellness centers and medical tourism hospitals across India and Sri Lanka from 2020 to 2025, assessing conformity to *Charaka Samhita* guidelines.

**Methods**: This descriptive study utilized publicly accessible data from Ayurveda centers and medical tourism hospitals, including treatment schedules and protocols. Data were coded for duration, therapy type, and classical adherence. Quantitative analyses (means, medians, frequencies, and significance tests) explored regional and facility-type variations. Ethical clearance was not required as anonymized secondary data was used.

**Results**: Treatment durations between the two countries showed no significant differences, commonly ranging between 7 to 21 days for *Shamana* and *Shodhana* therapies. India demonstrated higher adherence to classical Ayurvedic protocols compared to Sri Lanka, where adaptations for wellness tourism and operational constraints influenced treatment modifications. Both therapy types were used equally, reflecting balanced clinical approaches.

**Conclusions & Recommendations**: While Ayurveda treatment durations and methods remain largely aligned across India and Sri Lanka, India maintains closer adherence to classical texts. Variations in Sri Lanka reflect dynamic integration of traditional knowledge within contemporary wellness tourism frameworks. Strengthening protocol standardization and classical guideline adherence is recommended to preserve Ayurveda's therapeutic integrity. Collaborative efforts between regulators, clinicians, and tourism stakeholders can optimize treatment authenticity and enhance global competitiveness of Ayurveda wellness and medical tourism in Sri Lanka.

**Keywords**: Ayurveda, medical tourism, wellness tourism, Panchakarma, treatment duration

## PP-60 (ID 213): Antioxidant and Anti-Ageing Potential of AmalakiRasayana: A Systematic Review of Clinical and Experimental Evidence (2015–2025)

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**Introduction:** Ageing is a complex biological process associated with oxidative stress, which accelerates cellular degeneration and contributes to age-related disorders. In Ayurveda, AmalakiRasayana, prepared from *Phyllanthus emblica* (Indian Gooseberry), is described as a potent Rasayana formulation with rejuvenating and anti-ageing properties. Recent experimental and clinical studies have explored its antioxidant effects, supporting traditional Ayurvedic claims with scientific evidence.

**Objective:** The objective of this systematic review was to evaluate the antioxidant potential of AmalakiRasayana and its implications for healthy ageing by synthesizing evidence from clinical and experimental studies published between 2015 and 2025.

**Methods:** This review followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. Electronic databases PubMed, Scopus, Web of Science, the Cochrane Library, and the AYUSH Research Portal were searched for literature published between January 2015 and May 2025, completed on May 31, 2025. Eligible studies included randomized controlled trials, clinical studies, and experimental research assessing antioxidant outcomes such as superoxide dismutase (SOD), catalase (CAT), glutathione (GSH), total antioxidant capacity (TAC), and malondialdehyde (MDA). Studies not reporting antioxidant outcomes or not using Amalaki Rasayana were excluded.

**Results:** A qualitative synthesis integrated findings from nine studies four clinical and five experimental. Formulations used included classical Amalaki Rasayana powder and standardized extracts. Most studies showed significant increases in SOD, GSH, and TAC, and reductions in MDA, indicating enhanced antioxidant defense and reduced oxidative stress. Some animal studies also demonstrated improved physiological resilience and delayed ageing biomarkers.

**Conclusion and Recommendations:** Overall, the evidence suggests Amalaki Rasayana enhances endogenous antioxidant systems and supports its role as a rejuvenative Rasayana. However, evidence quality remains moderate due to methodological variations and small sample sizes. Future large-scale randomized controlled trials are essential to confirm these effects and promote evidence-based integration of Amalaki Rasayana into geriatric health care.

*Keywords: Amalaki Rasayana, Ayurveda, Antioxidant*

## PP 61 (ID 216): Immunomodulatory Effects of Swarna Prashana in Children: A Systematic Review of Clinical and Experimental Evidence (2015–2025)

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**Introduction:** Swarna Prashana is an ancient Ayurvedic pediatric intervention involving the oral administration of processed gold (Swarna Bhasma) with ghee and honey, traditionally used to promote Bala (strength), cognition, and immunity in children. Recent scientific interest has prompted clinical investigations of its immunomodulatory effects using both clinical and laboratory outcomes. However, findings remain heterogeneous, emphasizing the need for systematic synthesis.

**Objective:** The objective of this review was to systematically evaluate clinical and experimental evidence published between 2015 and 2025 on the immunomodulatory effects of Swarna Prashana in children, focusing on clinical and biochemical immune outcomes.

**Methods:** This review followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. Electronic databases PubMed, Embase, Scopus, CENTRAL, AYUSH Research Portal, and Google Scholar were searched (January 2015 – May 2025; search completed May 31, 2025). Eligible studies included RCTs, quasi-experimental, and observational designs assessing Swarna Prashana in participants aged 0–18 years. Studies reporting clinical outcomes (infection frequency/duration) or laboratory outcomes (IgG, IgA, IgM, lymphocyte subsets, cytokines) were included. Two reviewers extracted data and assessed bias using Cochrane RoB 2.0 and ROBINS-I. Due to heterogeneity, a qualitative (narrative) synthesis was performed.

**Results:** Twelve studies met criteria, including small-scale RCTs and cohorts. Clinically, Swarna Prashana reduced the frequency and severity of respiratory and febrile infections and improved well-being and school attendance. Laboratory findings showed increased IgG, IgA, IgM, and enhanced T-cell/NK-cell activity with cytokine modulation (IL-2, IL-6, TNF-α). Short-term safety was favorable; no serious adverse events occurred. Variability in formulation, dosage, and duration limited comparability.

**Conclusion & Recommendations:** Evidence indicates that Swarna Prashana may confer immunomodulatory benefits and is well tolerated in children. The overall certainty of evidence is low, owing to small samples, heterogeneity, and lack of standardized preparations. Future large-scale, high-quality RCTs using standardized formulations and validated immune biomarkers are needed to confirm their role in pediatric immunomodulation.

**Keywords:** Swarna Prashana, Ayurveda, Immunomodulation, Pediatrics, Systematic Review,

*Activity, Oxidative Stress, Healthy Ageing, Rasayana Therapy*

## PP-62 (ID 238): A CLINICAL STUDY ON THE EFFECT OF *ROGHANE KHAS* IN THE MANAGEMENT OF KNEE OSTEOARTHRITIS

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**Introduction**: Knee osteoarthritis is typically the result of wear and tear and progressive loss of articular cartilage and about 365 million people have knee osteoarthritis globally. *Roghane Khas* is an external application mentioned in the Ayurveda Pharmacopoeia that consists of *Calotropis gigantean, Ricinus communis, Datura alba, Cera alba, Lead oxide, Kerria lacca, and Sesamum indicum*.

**Objective**: To evaluate the effect of *Roghane Khas* on reduction of pain and improvement in physical function in patients with knee osteoarthritis.

**Methods**: A single centered, randomized clinical study was conducted from October 2024 to September 2025 at National Ayurveda Teaching Hospital, Borella, Sri Lanka. Ethical clearance was obtained from Bandaranaike Memorial Ayurvedic Research Institute (REC-BMARI/2024/003) and informed written consent was taken from all participants before the study. Patients aged more than 50 years diagnosed with knee osteoarthritis according to the American College of Rheumatology criteria were included while those with other types of arthritis, Pregnant and lactating mothers and systemic illness were excluded. *Roghane Khas* was tested for the quality standard parameters recommended by the Indian Pharmacopoeia and WHO guidelines. *Roghane Khas* was applied externally as a thin layer over the affected knee joints. Assessments were done at baseline and after 30 days using the validated Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire.

**Results**: After 4 weeks of treatment, the mean WOMAC Pain scores decreased from 13.5 ± 2.1 to 8.5 ± 1.9 ($p < 0.001$), a 4.84-point reduction, indicating significant pain relief, while physical function improved from 46.8 ± 7.2 to 23.0 ± 6.5 ($p < 0.001$), reflecting marked improvement in daily activity performance.

**Conclusions & Recommendations**: The result of this study shows significant improvement in the overall management of knee osteoarthritis. Further studies should be done with the larger sample size to generalize our findings.

**Keywords**: *Roghane Khas*, Knee osteoarthritis, WOMAC, Physical function

## PP-63 (ID 218): Parental Perspectives on the Effectiveness of Complementary and Alternative Medicine for Children with Mental and Developmental Disorders Attending National Ayurveda Teaching Hospital, Borella

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Mental and developmental disorders in children require sustained, multidisciplinary care involving behavioral, educational, and medical interventions. In Sri Lanka, a significant proportion of parents seek Complementary and Alternative Medicine (CAM), particularly Ayurveda, either as an adjunct or an alternative to conventional treatments. Understanding parental perceptions of effectiveness is essential for guiding clinical practice, optimizing service delivery, and informing health policy. This descriptive cross-sectional study aimed to evaluate parental perspectives and usage patterns of CAM among children with mental and developmental disorders attending the National Ayurveda Teaching Hospital, Borella. Parents of children aged 2–16 years diagnosed with Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD), Global Developmental Delay (GDD), and Intellectual Disability (ID) were included. A total of 147 parents were selected using convenience sampling. Data was collected using a standardized, interviewer-administered questionnaire. Descriptive statistics were generated using Microsoft Excel 2021. Ethical approval for the study was obtained from the Ethics Review Committee (ERC), Faculty of Medicine, University of Colombo. Ayurveda emerged as the most frequently used CAM modality and was perceived as highly beneficial. Among the participants, 42 (28.6%) reported that Ayurveda "made things much better," while 91 (61.9%) stated it "made things slightly better." Other commonly utilized therapies included speech therapy, where 17 parents reported "much better" and 39 reported "slightly better" improvement, and occupational therapy, reported as "much better" by 3 parents and "slightly better" by 43. Physiotherapy, traditional Sri Lankan medicine, Unani, Siddha, acupuncture, and specialized diets were less commonly used, with mixed perceptions of effectiveness. These findings underscore the strong cultural preference and trust placed in Ayurveda among Sri Lankan parents managing children with developmental disorders. Integrating safe, evidence-based CAM modalities with conventional therapies may enhance holistic, accessible, and culturally acceptable care. Further research is needed to assess objective clinical outcomes and evaluate the safety and long-term impact of CAM in pediatric populations.

**Key words**- Alternative Medicine, Complementary Medicine, Children with Mental and Developmental Disorders, Parental Perspectives

**PP 64 (ID 193): A Case Study – An Integrated Therapeutic Protocol of Ayurveda and Acupuncture in Managing Sandhigatha Vata with Special Reference to Proximal Interphalangeal Joint Arthritis**

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**Introduction:** Proximal interphalangeal joint arthritis is an inflammatory and degenerative disorder characterized by cartilage erosion and friction between joint surfaces, leading to pain, stiffness, and restricted movement. In Ayurveda, this condition corresponds to Sandhigatha Vata, caused by the aggravation of Vata Dosha and depletion of lubricating and nourishing fluids (Dhatukshaya), resulting in Sandhi Shoola (joint pain), crepitus, and limited mobility. A 71-year-old female presented to the National Ayurveda Teaching Hospital with a two-month history of severe pain, swelling, and restricted motion in interphalangeal and metacarpophalangeal joints of both hands.

**Objective**: To evaluate the efficacy of an integrated therapeutic protocol combining Ayurveda and Acupuncture in managing patient with SandhigathaVata corresponding to proximal interphalangeal (PIP) joint arthritis.

**Method**: Ayurvedic management included administration of Rasna Saptaka and Nirgundi Lashunan decoctions for eight and four weeks respectively, followed by Denibadee decoction. RasnadeeVati, Gokshuradee Guggulu, Sudarshana Choorna, and Navarathna Kalka were prescribed throughout the treatment. External therapy included Dashanga Lepa application, oil massage using Sarshapadee and Kubja Prasarini oils (1:1), and Nadi Sweda. Acupuncture was performed for two weeks. Clinical evaluation included the Numerical Rating Scale (NRS) for pain, assessment of swelling and range of motion, and ESR for inflammatory activity.

**Results**: After two weeks of treatment, pain reduced from 7–10 to 4–6 on the NRS. At four weeks, it further reduced to 1–3, and after eight weeks, pain was completely relieved (NRS 0). Swelling was markedly decreased, and range of motion was fully restored by the end of eight weeks. ESR decreased from 73 mm/1st hour at baseline to 47 mm/1st hour at eight weeks.

**Conclusion**: This case demonstrated that an integrated therapeutic approach combining Ayurveda and acupuncture can be effective in significantly reducing pain and swelling and restoring functional mobility of a patient with SandhigathaVata, corresponding to PIP joint arthritis.

**Keywords**: SandhigathaVata, Proximal Interphalangeal Joint Arthritis, Ayurveda, Acupuncture

## PP-65 (ID-198) Suicide Literacy, Ideation and Psychological Help-Seeking Behaviors among Allied Health Undergraduates of The University of Peradeniya

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**Introduction**: Suicide remains a major public health issue globally and in Sri Lanka, despite being highly preventable. Early detection and effective prevention strategies are crucial. Establishing accessible mental health support systems and improving suicide literacy are key to addressing suicidal behavior and encouraging help-seeking.

**Objective**: To assess the suicide literacy, ideation and psychological help-seeking behaviors among allied health undergraduates of the University of Peradeniya.

**Methods:** A cross-sectional survey was conducted from November 1st - 20th, 2023, among 306 undergraduates at the Faculty of Allied Health Sciences, University of Peradeniya. Data were collected using a self-administered questionnaire comprising four sections: sociodemographic data and history of psychotic disorders; suicide literacy and awareness of psychological health services; suicidal ideation and related history; and attitudes toward seeking professional psychological help. Validated tools such as the LOSS, SIDAS, and ATSPPH-SF were used. Associations between suicide literacy, ideation, and psychological help-seeking behaviors were analyzed using the chi-square test.

**Results**: This study included 460 Allied Health undergraduates, revealing that 40% had high awareness of psychological health services, while 55% had low and 5% none. Only 5.4% reported mental health issues, with counseling being the most recognized support. Suicide literacy was generally low to moderate, though 63.7% had good knowledge of treatment options. Suicide ideation was low in 68.7%, high in 4.6%, and absent in 26.7%. Psychological help-seeking behaviors were mostly low or moderate, with 0.8% showing positive attitudes. Significant associations were found between suicide literacy, awareness, and help-seeking, but not between suicide literacy and suicide ideation or help-seeking.

**Conclusion & Recommendations:** The study found that awareness of mental health services and suicide literacy were associated with help-seeking behaviors, but not with suicidal ideation, which also showed no link to help-seeking behaviors among Allied Health undergraduates. The study urges awareness programs to boost student help-seeking and recommends adding suicide education to curricula.

**Key words**: Suicide literacy; Suicidal ideation; Psychological help-seeking